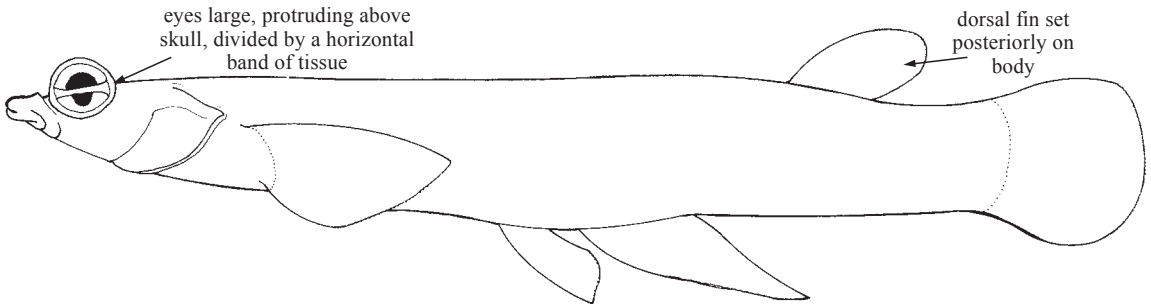


ANABLEPIDAE

Foureyed fishes

by M.J. Ghedotti, Regis University, Colorado, USA and E.O. Wiley, Museum of Natural History, Kansas, USA

Diagnostic characters: Small to medium-sized fishes (to about 35 cm total length). Body elongate, depressed anteriorly, laterally compressed posteriorly. Head flattened; mouth upturned and terminal; teeth unicuspid in adults and postembryonic juveniles. **Eyes large, protruding above skull and divided horizontally by band of opaque tissue into upper and lower halves**, retina similarly divided, this arrangement allowing for simultaneous aerial and aquatic vision. **No spines in fins; dorsal fin set far posteriorly on body** with 7 to 10 soft rays; **anal fin in adult males forms a scaled tubular intromittent organ (gonopodium) which encloses the sperm duct**; caudal fin rounded, often with an indistinct lower lobe; pectoral fins rounded and inserted at or slightly below midbody, with 20 to 26 soft rays; pelvic fins abdominal in position, with 6 soft rays. **Colour:** plain, lacking patterning, to ornamented with series of 1 or more longitudinal stripes along body. Males and females not strikingly different in colour pattern.



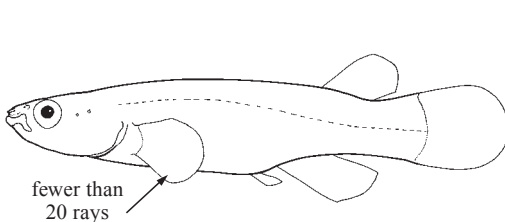
Habitat, biology, and fisheries: Occurring in western Central America and northern South America. Although all 3 species occur mostly in fresh water, they may also be found in very shallow coastal and estuarine waters. They live near the surface and may lurk out of the water on muddy or sandy banks. The divided eyes allow them to search for aerial predators. Diet consists of terrestrial and aquatic invertebrates and periphyton on exposed mudflats. Like the poeciliid live-bearing topminnows, foureyed fishes have internal fertilization and bear 'live' young, but this characteristic has evolved in both lineages independently. None of these species is commercially important as food, but they are locally consumed and are sometimes sold at local fish markets. They are occasionally marketed in the aquarium trade.

Similar families occurring in the area

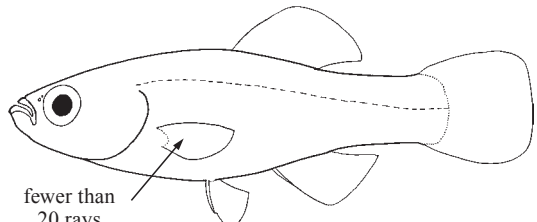
None of the similar families occurring in the area have the protruding and horizontally divided eyes characteristic of the foureyed fishes. Further distinguishing characters of these families are the following:

Rivulidae: males (when present) without gonopodium; fewer than 20 pectoral-fin rays; third anal-fin ray branched; small, not larger than 5 cm standard length.

Fundulidae: males without gonopodium; fewer than 20 pectoral-fin rays; dorsal-fin origin anterior to insertion of last 3 anal-fin rays; third anal-fin ray branched.



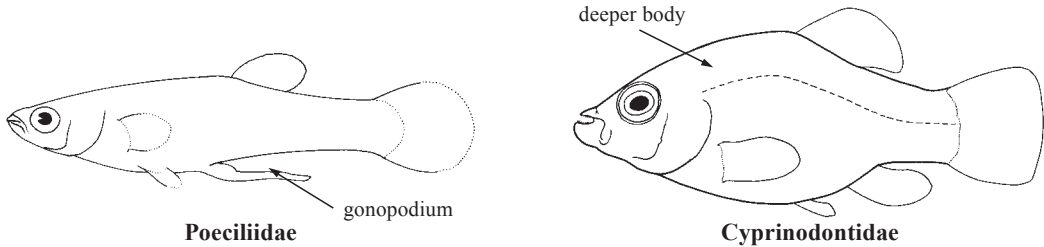
Rivulidae



Fundulidae

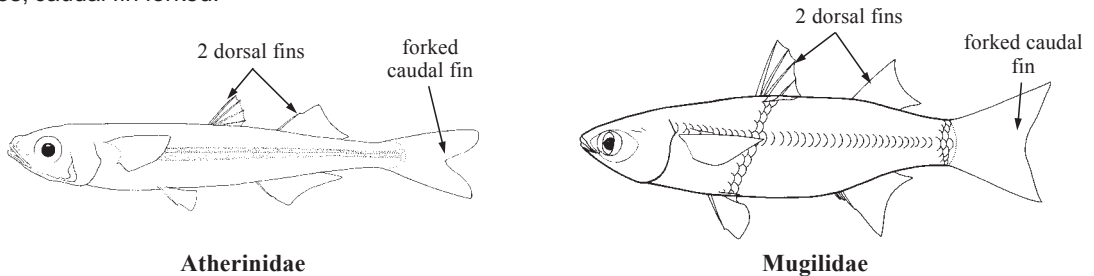
Poeciliidae: males with anal-fin modified as unscaled, non-tubular gonopodium supported by anal-fin rays 3, 4, and 5; pectoral fins inserted above midbody, fewer than 20 pectoral-fin rays.

Cyprinodontidae: males without gonopodium; dorsal-fin origin anterior to insertion of last 3 anal-fin rays; fewer than 20 pectoral-fin rays; third anal-fin ray branched; usually deeper-bodied.



Atherinidae: 2 dorsal fins, the first with 3 to 9 slender spines, 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; caudal fin forked.

Mugilidae: 2 dorsal fins, the first with slender spines; males without gonopodium; anal and pelvic fins with spines; caudal fin forked.



Key to the species of Anablepidae occurring in the area

- 1a. Scales large, fewer than 64 scales in midlateral scale row *Anableps anableps*
- 1b. Scales small, greater than 75 scales in midlateral scale row *Anableps microlepis*

List of species occurring in the area

- Anableps anableps* (Linnaeus, 1758). Amazon River Delta, Brazil NW to Orinoco River Delta, Venezuela.
- Anableps microlepis* Müller and Troschel, 1844. Amazon River Delta, Brazil NW to Orinoco River Delta, Venezuela.

References

Ghedotti, M. J. 1998. *Phylogeny and classification of the Anablepidae* (Teleostei: Cyprinodontiformes). In *Phylogeny and Classification of Neotropical Fishes*, edited by L.R. Malabarba, R.E. Reis, R.P. Vari, Z.M. Lucena, and C.A.S. Lucena. Porto Alegre, Brazil, Edipucrs, pp. 560-582.

Miller, R.R. 1979. Ecology, habits, and relationships of the Middle American cuatro ojos, *Anableps dowi* (Pisces: Anablepidae). *Copeia*, 1979:82-91.