CHAPTER 141

INERMIIDAE: Bonnetmouths

By K. C. Lindeman

The family Inermiidae (bonnetmouths) contains two species restricted to the western central north Atlantic (WCNA) (Nelson 1994). Bonnetmouths are planktivorous, midwater fishes that form schools above coral and hardbottom habitats to depths of 100 m in tropical and subtropical regions. They are very elongate fusiform fishes to 25 cm total length. Due to their relatively small size, the family has little economic significance. They are poorly known and may range wider than current distributional records indicate (Robins & Ray 1986). Characteristic morphological traits include: highly protractile premaxillary, upper median process reaching to or beyond the orbits; teeth absent on jaws, vomer, and palatine; two enlarged chin pores; caudal fin deeply forked; dorsal fins widely separated in *Emmelichthyops atlanticus* with 9-10 first dorsal spines; dorsal fins almost connected with deep notch in *Inermia vittata* and 14-17 first dorsal spines; anal fin with 3 spines and 8-10 rays; small keels on each of the caudal peduncle; 26 vertebrae (12 or 13 abdominal); scales are ctenoid; the head is scaled, except for snout and jaws.

The two monotypic genera, *Emmelichthyops* and *Inermia,* have been partitioned among various families. Schultz (1945) included the inermiids within the Emmelichthyidae, then a polyphyletic assemblage of planktivorous fishes. Robins & Starck (1961) subsequently suggested the inermiids should be placed within the Centracanthidae. Heemstra & Randall (1977) and Johnson (1981) used significant differences in the superficially similar protrusible jaw mechanisms and other evidence to remove several genera from the Emmelichthyidae, including *Inermia* and *Emmelichthyops* which were placed in the Inermiidae. Evidence that inermiids are derived from haemulids was presented by Johnson (1980).

Inermiid larvae are unknown. If similar to haemulid larvae, they will possess a relatively unspecialized percoid larval morphology. However, inermiid larvae should be quite elongate with early development of a highly protrusible premaxillary. Inermiids possess 26 vertebrae (myomeres). This characteristic is found in haemulids, kyphosids, pomacentrids, inermiids, anthiines, one gramistine genus, and several carangids and sciaenids (Miller & Jorgenson 1973, Kendall 1979). Inermiids have substantially greater body depths as juveniles and body depth may also distinguish their larvae from these families. The widely separate dorsal fin of *E. atlanticus will*also be a useful character as the median fins develop in postflexion stages. At this stage, the high dorsal spine count of *Inermia vittata* may also be of use.

Juvenile stages are poorly known. The presence of a morphologically distinct early juvenile stage, as seen in many haemulids, does not presumably occur. Identification above ca. 10 mm SL at the family and species level should be relatively straightforward due to the unusual morphologies of the two inermiid species. For example, no families in the area have highly protractable jaws that lack teeth (Orrell 2003). This character, coupled with their unusually elongate bodies, dorsal fin placement, dorsal spine counts, and the small keels on the caudal peduncle, should allow species identification of juveniles.

Table Inermiidae 1. Status of developmental descriptions of western Atlantic inermiids. +: described; empty cell: unknown. PrF: preflexion larvae, 2-5 mm; PoF: postflexion larvae, 5-10 mm; Juv: juvenile, > 10 mm SL.

	PrF		PoF		Juv	
Species	**Field**	**Rear**	**Field**	**Rear**	**Field**	**Rear**
Emmelichthyops atlanticus					+	
Inermia vittata					+	

Table Inermiidae 2. Meristic characters of western Atlantic inermiids

	First Dorsal	Second Dorsal	Anal	Pectoral Rays	Lateral Line Scales
Emmelichthyops atlanticus	IX-X	II, 9-10	III, 9-10	18-19	ca. 75
Inermia vittata	XIV-XVII	II, 9	III, 8-9	19-20	ca. 80

INERMIIDAE *Emmelichthyops atlanticus* Schultz 1945

MERISTICS

Vertebrae	
Precaudal:	12-13
Caudal:	13-14
Total:	26
First Dorsal Fin:	IX-X
Second Dorsal Fin:	II, 9-10
Anal Fin:	III, 9-10
Pectoral Fin:	18-19
Lateral Line Scales:	ca. 75

LIFE HISTORY

Range: Bermuda, Florida Keys, Bahamas, Virgin Islands, Nicaragua, Barbados, and northern South America
Habitat: Forms small schools over coral formations from 3 to 100 m.
ELH Pattern: Oviparous; pelagic eggs & larvae.
Spawning:
Season: Unknown.
Area: Throughout range
Mode: Multiple batches

LITERATURE

Randall 1968, Cervigón et al. 1993, Orrell 2003.

EARLY LIFE HISTORY DESCRIPTION

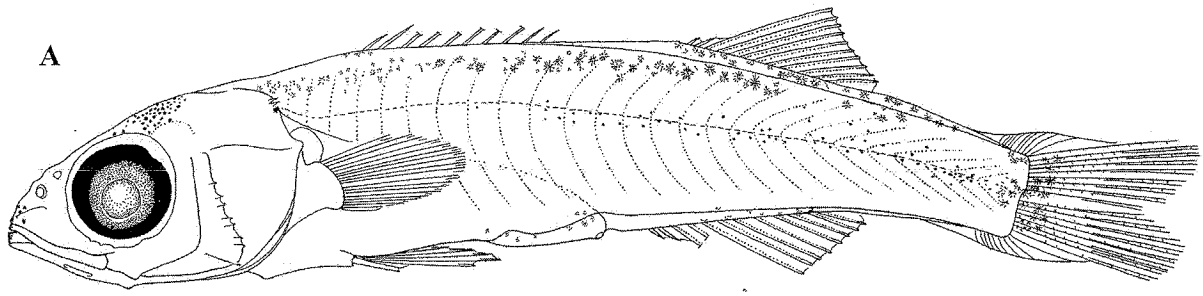
EGGS: Unknown.

LARVAE: Unknown.

JUVENILES:
Settlement Size: Unknown.
Pigment: At ca. 20 mm, a dorsolateral stripe is originating below the second dorsal fin with melanophores extending in both directions. Faint melanophores on nape, A fin base, and snout. Group of melanophores on C fin base. Older juveniles and adults are yellowish-blue dorsally with three-four stripes, and pale silver laterally.
Diagnostic Characteristics: Widely separate dorsal fins. Raised bony plate on posterior edge of opercle.

ILLUSTRATIONS

A) J. Javech drawing, field-collected; USNM 318658. 22.0 mm SL.



INERMIIDAE — *Inermia vittata* Poey 1860

MERISTICS

Vertebrae:	
Precaudal:	12-13
Caudal:	13-14
Total:	26
First Dorsal Fin:	XIV-XVII
Second Dorsal Fin:	II, 9
Anal Fin:	III, 8-9
Pectoral Fin:	19-20
Lateral Line Scales:	ca. 80

LIFE HISTORY

Range: Bermuda, Florida, Bahamas, Belize, northern South America
Habitat: Forms schools in depths greater than 5 m typically over outer shelf reefs.
ELH Pattern: Oviparous; pelagic eggs & larvae.
Spawning:
Season: Unknown.
Area: Throughout range
Mode: Multiple batches

LITERATURE

Randall 1968, Cervigón et al. 1993, Orrell 2003.

EARLY LIFE HISTORY DESCRIPTION

EGGS: Unknown.

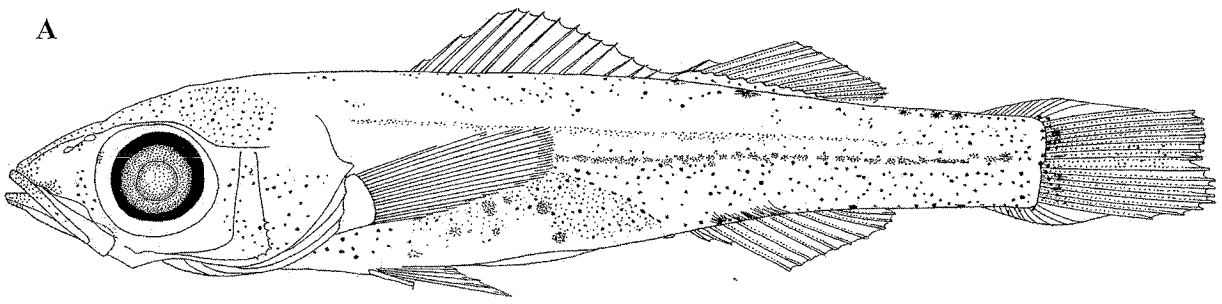
LARVAE: Unknown.

JUVENILES:
Settlement Size: Unknown.
Pigment: At ca. 20 mm, small melanophores are distributed across the body. A large cluster of melanophores coalesces along the A fin base. Groups of melanophores occur on the nape and snout. A line of melanophores is present dorsolaterally. A dark, largely internal line of melanophores occurs along the ventral and dorsal margins of the vertebral column. Older juveniles and adults are blue dorsally with three dark stripes, and bluish-silver laterally with a slightly wider midlateral stripe.
Diagnostic Characteristics: D fins are not widely connected. First D fin has high spine count.

ILLUSTRATIONS

A) J. Javech drawing, field-collected; USNM 317033. 19.5 mm SL.

A



Early Stages of Atlantic Fishes

An Identification Guide for the Western Central North Atlantic

Volume II

Edited by

William J. Richards

2005

Taylor & Francis
Taylor & Francis Group

Boca Raton London New York Singapore

A CRC title, part of the Taylor & Francis imprint, a member of the
Taylor & Francis Group, the academic division of T&F Informa plc.