Chapter 5
Aulopiformes
Chapter 5

Order Aulopiformes

Number of suborders (4) Synodontoidei, Chlorophthalmoidei, Aulopisauroidei, Giganturoidei
Number of families 15
Number of genera 44
Number of species approx. 236

GENERAL LIFE HISTORY

Distribution Typically small to moderate-sized fishes found in all oceans.
Relative abundance Pelagic species ubiquitous, not abundant; deep-living benthic species uncommon; some coastal benthic species relatively abundant.
Adult habitat Synodontids, chloropthalmids, ipnopids benthic; other families mostly meso- or bathypelagic; hover-and-strike or ambush predators.

EARLY LIFE HISTORY

Mode of reproduction Oviparous; hermaphroditism common in deep-water species.
Knowledge of ELH Eggs known for few species, mostly synodontids; larvae known for some species in all suborders.
ELH Characters: Eggs: aulopid and synodontid eggs round, 1.0–1.5 mm in diameter, sculptured shell with irregular polygonal network on surface.
Larvae: moderately to very elongate, slightly to strongly compressed with preanal length ranging from < 66% to > 66% of body length; pigmentation generally light with distinctive peritoneal patches in several families; head spines lacking except in alepisaurids and some paralepidids.
Example species: SYNODONTOIDEI: Aulopus bajacali (Aulopidae), Saurida undosquamis (Synodontidae).
CHLOROPTHALMOIDEI: Chlorophthalmus sp. (Chlorophthalmidae).
AULOPISAUROIDEI: Rosenblattichthys volucris (Scopelarchidae), Evermannella indica (Evermannellidae), Alepisaurus ferox (Alepisauridae), Sudis atrox (Paralepididae), Anotopterus pharaon (Paralepididae).
GIGANTUROIDEI: Gigantura indica (Giganturidae).

REFERENCES
Order Aulopiformes

Aulopiformes/Synodontoidei/Aulopidae

*Aulopus*
*A. bajacali* 12.3 mm
(Okiyama 1974)

Aulopiformes/Synodontoidei/Synodontidae

*Saurida*
*S. undosquamis*
15.6 mm
(Okiyama 1974)

Aulopiformes/Chlorophthalmoidei/Chloropthalmidae

*Chlorophthalmus*
*Chlorophthalmus* sp.
17.1 mm
(Okiyama 1984)

Aulopiformes/Alepisauroidei/Scopelarchidae

*Rosenblatichthys*
*R. volucris* 13.0 mm
(Watson and Sandknop 1996c)
Chapter 5

Aulopiformes/Alepisauroidei/Evermannellidae

_Evermannella_

_E. indica_ 9.1 mm  
(Johnson 1982)

Gigan

_G. ind_

(Johans Bertel)

Aulopiformes/Alepisauroidei/Alepisauridae

_Alepisaurus_

_A. ferox_ 8.4 mm  
(Ambrose 1996)

Aulopiformes/Alepisauroidei/Paralepididae

_Sudis_

_S. atrox_ 9.2 mm  
(Ozawa 1986)

Aulopiformes/Alepisauroidei/Paralepididae

_Anotopterus_

_A. pharao_ 14.2 mm  
(Okiyama 1984)
Order Aulopiformes

Aulopiformes/Giganturoidei/Giganturidae

Gigantura
G. indica 4.5 mm
(Johnson and Bertelsen 1991)
Chapter 5

Order Aulopiformes

Suborder Synodontidoidei

Family Synodontidae (Lizardfishes)

Number of genera 4

Number of species 57

GENERAL LIFE HISTORY

Distribution Small to medium-size coastal fishes found worldwide in tropical to temperate regions.

Relative abundance Some continental shelf species moderately abundant.

Adult habitat Coastal shelf to slope, bays and estuaries, most species benthic ambush predators.

EARLY LIFE HISTORY

Mode of reproduction Oviparous; planktonic eggs and larvae.

Knowledge of ELH Eggs known for a few species, larvae known for many species.

ELH Characters:

Eggs: planktonic, round, 1.0–1.5 mm diameter, sculptured shell with network of irregular polygons; yolk homogeneous, oil globule(s) lacking.

Larvae: slender bodied with a long tubular gut, preanal length ranges from about 66% to 75% BL; head rounded in preflexion stage, spines lacking on head and pectoral girdle; about 45–65 myomeres; paired lateral series of up to 8–12 blotches along entire length of gut.

Example species: Synodus lucioceps (California Current region).

Meristics:


Order Aulopiformes

Aulopiformes/Synodontoidei/Synodontidae

*Synodus lucioceps*

from: Stevens and Moser 1996a
Chapter 5

Order Aulopiformes

Suborder Chlorophthalmoidei

Family Notosudidae (Paperbones)

Number of genera 3

Number of species 19

GENERAL LIFE HISTORY

Distribution Small to medium-size deepsea fishes, occur nearly worldwide.

Relative abundance Uncommon.

Adult habitat Meso- and bathypelagic or epibenthic on continental or insular slopes.

EARLY LIFE HISTORY

Mode of reproduction Oviparous, synchronous hermaphrodites, planktonic larvae.

Knowledge of ELH Eggs unknown, larvae known for a moderate number of species.

ELH Characters:

Larvae: slender body, somewhat depressed head, wedge-shaped snout; eyes narrow; preanal length usually slightly less than 33% BL to near midbody; about 42–66 myomeres; typically a band of small melanophores on caudal peduncle.

Example species: Scopelosaurus sp. (North Pacific between ca. 20°–60° N; these larvae have been identified as S. harryi following Bertelsen et al. [1976]; however, Balanov and Savinykh [1999] reported that both S. harryi and S. adleri occur in the North Pacific, with S. harryi reproducing in the west and S. adleri reproducing in the east).


Order Aulopiformes

Aulopiformes/Chloropthalmoidei/Notosudidae

*Scopelosaurus* sp.

from: Watson and Sandknop 1996d

5.8 mm

12.8 mm

33.8 mm
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Order Aulopiformes

Suborder Alepisauroidei

Family Scopelarchidae (Pearleyes)

Number of genera 4

Number of species 17

GENERAL LIFE HISTORY

Distribution Small to moderate-size midwater predators in all oceans except the Arctic and the Mediterranean Sea.

Relative abundance Ubiquitous but not abundant.

Adult habitat Meso- and bathypelagic.

EARLY LIFE HISTORY

Mode of reproduction Oviparous, synchronous hermaphrodites, planktonic larvae.

Knowledge of ELH Eggs unknown, larvae known for most species.

ELH Characters: Eggs: unknown.

Larvae: deep-bodied with large head to moderately slender with moderately small head, mouth large, snout long and wedge-shaped; eye narrow, vertical axis inclined obliquely forward; preanal length about 33–50% of body length, gut slightly sigmoid with bulbous stomach, wide translucent space between gut and trunk musculature; about 40–65 myomeres; one or more prominent pigment patches above gut.

Example species: Scopelarchus guentheri (Circumglobal in warm water).

Meristics:


REFERENCES

Order Aulopiformes

Aulopiformes/Alepisauroidei/Scopelarchidae

*Scopelarchus guentheri*

from: Watson and Sandknop 1996c

6.5 mm

11.5 mm

18.5 mm

22.5 mm

35.5 mm

48.5 mm
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Order Aulopiformes

Suborder Alepisauridei

Family Evermannellidae (Sabretooths)

Number of genera 3
Number of species 7

GENERAL LIFE HISTORY

Distribution Small midwater predators occurring between about 40° N and 40° S.
Relative abundance Not abundant.
Adult habitat Mesopelagic deep-sea predators.

EARLY LIFE HISTORY

Mode of reproduction Oviparous, synchronous hermaphrodites, planktonic larvae.
Knowledge of ELH Eggs unknown, larvae known for all genera.
ELH Characters: Eggs: unknown.
Larvae: moderately elongate and compressed, preanal length about one-half body length; snout pointed, mouth large, teeth form early; oblong eye; about 45–54 myomeres; moderate to large unpaired pigment patches over gut, melanophores on myosepta.
Example species: Evermannella ahlstromi (Equatorial to transitional waters of the eastern North and South Pacific).


Order Aulopiformes

Aulopiformes/Alepisauroidei/Evermannellidae

_Evermannellaahlstromi_

from: Ambrose 1996d and Johnson and Glodek 1975

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3.4 mm

7.5 mm

10.1 mm

17.7 mm

26.6 mm
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Order Aulopiformes

Suborder Alepisauroidei

Family Paralepididae (Barracudinas)

Number of genera 13

Number of species approx. 56

GENERAL LIFE HISTORY

Distribution Small to moderate-size predators in all oceans.

Relative abundance Ubiquitous and relatively abundant judging from their importance as prey for cetaceans and larger oceanic predatory fishes (Fitch and Lavenberg 1968).

Adult habitat Epi- to bathypelagic zones of all oceans.

EARLY LIFE HISTORY

Mode of reproduction Oviparous, synchronous hermaphrodites, planktonic larvae.

Knowledge of ELH Eggs unknown, larvae known for many species.

ELH Characters: Eggs: unknown.

Larvae: elongate, compressed, head rounded in early larvae, snout becomes wedge-shaped, eyes oval in early larvae, becoming rounded in mid- to late larvae, gut short in early larvae, undergoing a marked ontogenetic elongation with numerous peritoneal pigment patches that increase in number as the gut elongates; about 52–121 myomeres.

Example species: Lestidiops ringens (North Pacific subarctic and transition zones, in eastern Pacific from British Columbia to Baja California).


Order Aulopiformes

Aulopiformes/Alepisoaridei/Paralepididae

*Lestidiops ringens*

from: Moser 1981 and Ambrose 1996b

- 5.6 mm
- 9.4 mm
- 16.5 mm
- 28.5 mm
- 58.0 mm
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      Ophidiinae: Ophidion marginatum, Ophidion selenops
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  Gadidae: Theragra chalcogramma
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