

# **Chapter 6**

**Myctophiformes**

**Order Myctophiformes**

Number of suborders	None (monophyly of the order demonstrated by Stiassny 1986, 1996, Johnson 1992)
Number of families	2
Number of genera	≥ 35
Number of species	≥ 246

*Neosc.*  
*N. mac*  
5.3 m  
(Okuyama)

**GENERAL LIFE HISTORY**

Distribution	All oceans.
Relative abundance	Adults and larvae uncommon to common, depending on species.
Adult habitat	Small to medium size (≤ 35 cm) inhabitants of shallow to deep ocean waters, most commonly lower epipelagic and mesopelagic zones; many species are vertical migrators.

*Benth.*  
*B. sub.*  
(Moseley  
1996b)

**EARLY LIFE HISTORY**

Mode of reproduction	All species known or assumed to be oviparous with planktonic eggs and larvae.
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Knowledge of ELH Eggs known for 2 genera, larvae known for 33 genera.

ELH Characters: **Eggs:** spherical, ca. 0.7–0.9 mm in diameter, with fragile chorion, segmented yolk, single oil globule ca. 0.1–0.3 mm in diameter.

*Centr.*  
*C. nig.*  
5.8 m  
(Moseley  
1970)

**Larvae:** slender to deep-bodied, compressed to robust, with preanal length most commonly a little less to a little more than half of body length, myomere count most commonly in the 30's, little or no spination on head, and pigmentation most commonly light to moderate, with melanophores most commonly present on gut and ventral margin of tail.

Example species: *Neoscopelus macrolepidotus* (Neoscopelidae), *Benthosema suborbitale*, *Centrobranchus nigroocellatus*, *Diogenichthys laternatus*, *Electrona risso*, *Gonichthys tenuiculus*, *Hygophum reinhardtii*, *Krefflichthys anderssoni*, *Loweina rara*, *Metelectrona ventralis*, *Myctophum nitidulum*, *Protomyctophum crockeri*, *Symbolophorus californiensis*, *Tarletonbeania crenularis* (Myctophidae, Myctophinae), *Bolinichthys longipes*, *Ceratoscopelus warmingii*, *Diaphus theta*, *Gymnoscopelus aphyia*, *Idiolychnus urolampus*, *Lampadena urophaos*, *Lampanyctodes hectoris*, *Lampanyctus nobilis*, *Lampichthys procerus*, *Lepidophanes gaussi*, *Lobianchia gemellarii*, *Nannobranchium atrum*, *Notolychnus valdiviae*, *Notoscopelus resplendens*, *Parvilux ingens*, *Scopelopsis multipunctatus*, *Stenobranchius leucopsarus*, *Taaningichthys minimus*, *Triphoturus nigrescens* (Myctophidae, Lampanyctinae).

*Dioge.*  
*D. late*  
(Moseley  
1970)

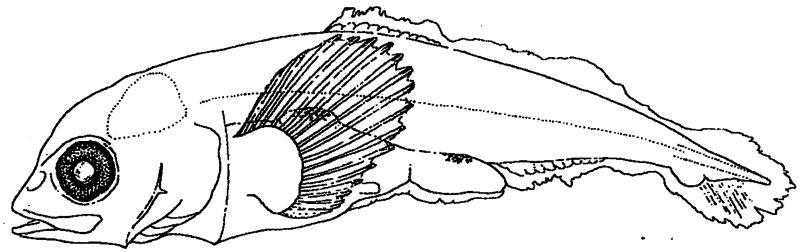
*Electr.*  
*E. riss*  
(Moseley  
1970)

**REFERENCES**

Johnson 1992, Stiassny 1986, 1996, others listed in family sections.

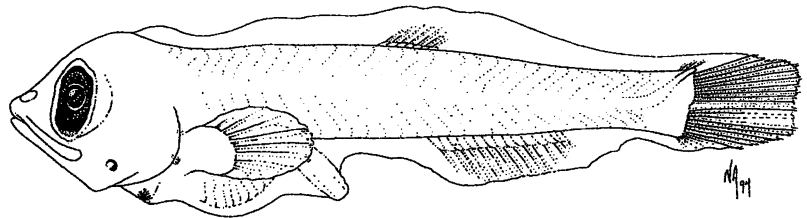
Myctophiformes/Neoscopelidae

*Neoscopelus*  
*N. macrolepidotus*  
5.3 mm  
(Okiyama 1988a)

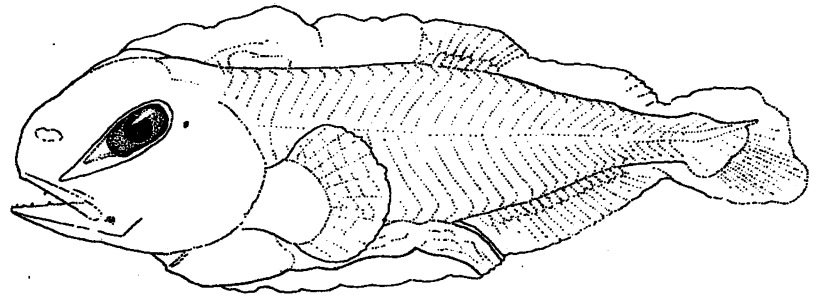


Myctophiformes/Myctophidae/Myctophinae

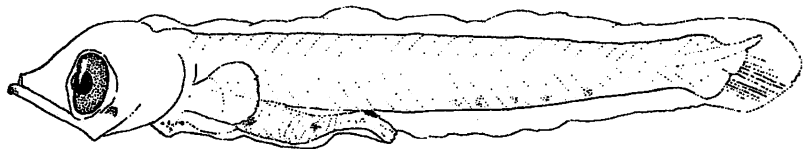
*Benthoosema*  
*B. suborbitale* 6.5 mm  
(Moser and Ahlstrom  
1996b)



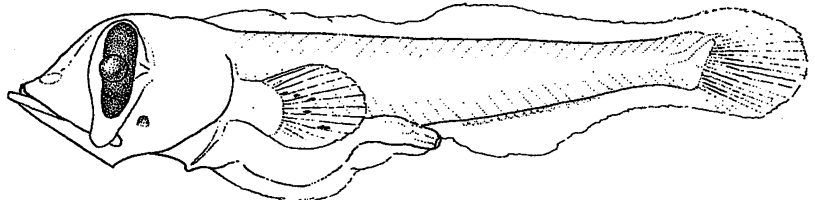
*Centrobranchus*  
*C. nigroocellatus*  
5.8 mm  
(Moser and Ahlstrom  
1970)



*Diogenichthys*  
*D. laternatus* 5.8 mm  
(Moser and Ahlstrom  
1970)



*Electrona*  
*E. risso* 6.3 mm  
(Moser and Ahlstrom  
1970)



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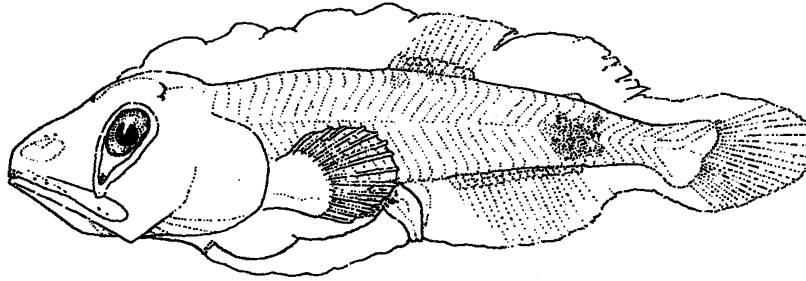
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**Gonichthys**

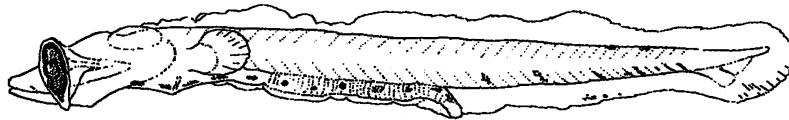
*G. tenuiculus* 6.2 mm  
(Moser and Ahlstrom  
1970)



*Myct*  
*M. ni*  
(Mos  
1970)

**Hygophum**

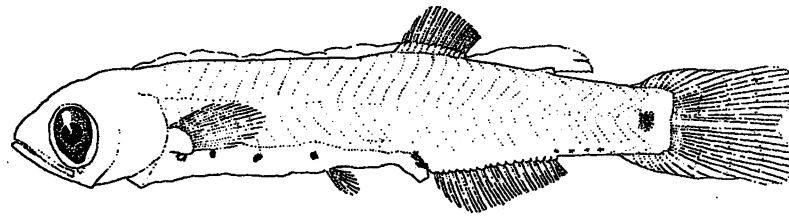
*H. reinhardtii* 7.4 mm  
(Moser and Ahlstrom  
1970)



*Syml*  
*S. ca.*  
8.5 m  
(Mos  
1970)

**Krefflichthys**

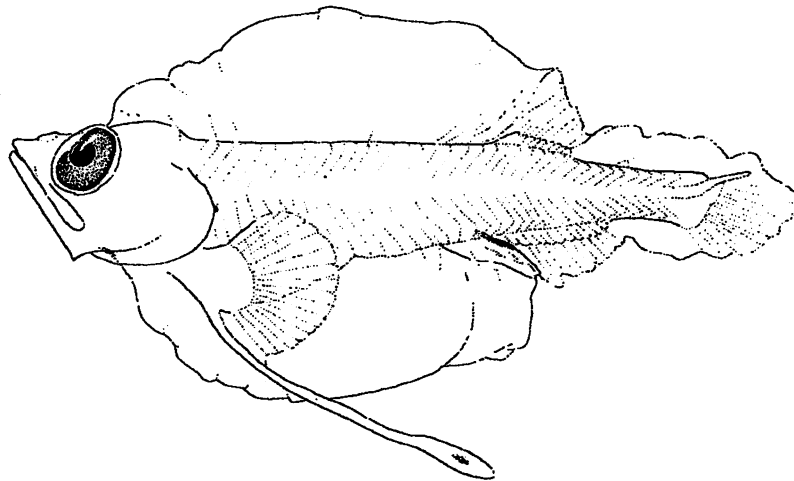
*K. anderssoni* 15.7 mm  
(Moser and Ahlstrom  
1974)



*Tarle*  
*T. cre*  
10.5 :  
(Mos  
1970)

**Loweina**

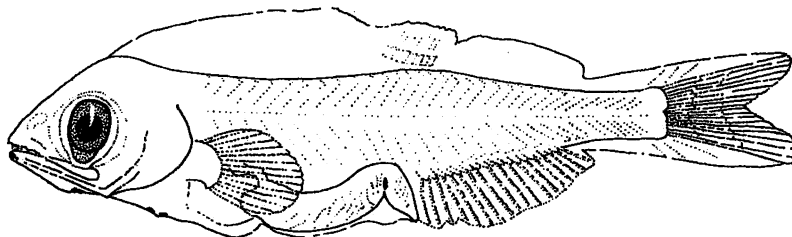
*L. rara* 8.5 mm  
(Moser and  
Ahlstrom 1970)



*Bolin*  
*B. lor*  
(Mos  
1996)

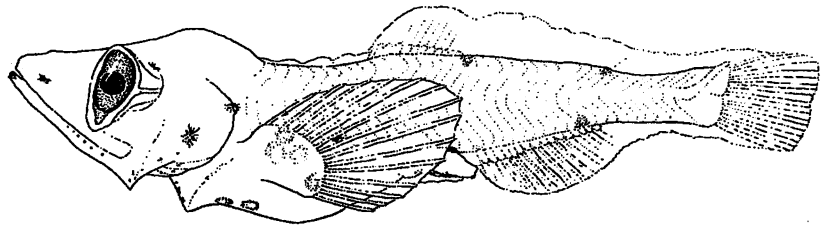
**Metelectrona**

*M. ventralis* 10.3 mm  
(Moser and Ahlstrom  
1974)

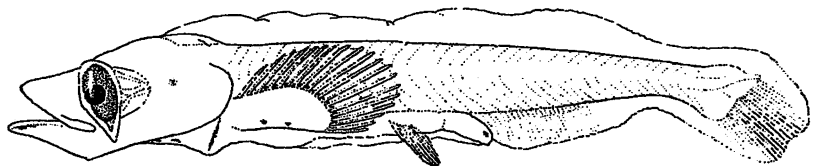


*Cerat*  
*C. wa*  
(Mose  
2001,

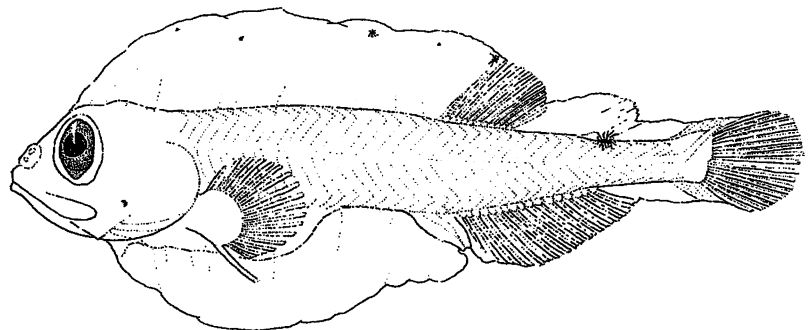
*Myctophum*  
*M. nitidulum* 7.0 mm  
(Moser and Ahlstrom  
1970)



*Symbolophorus*  
*S. californiensis*  
8.5 mm  
(Moser and Ahlstrom  
1970)

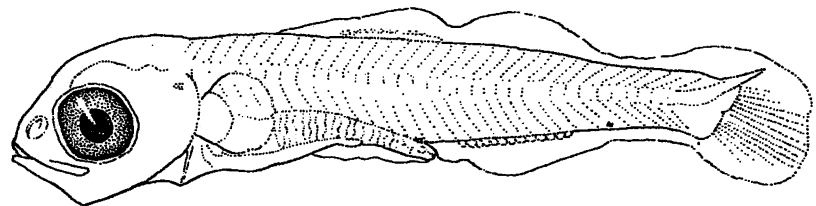


*Tarletonbeania*  
*T. crenularis*  
10.5 mm  
(Moser and Ahlstrom  
1970)

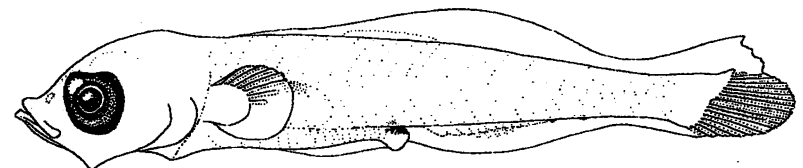


Myctophiformes/Myctophidae/Lampanyctinae

*Bolinichthys*  
*B. longipes* 5.2 mm  
(Moser and Ahlstrom  
1996b)

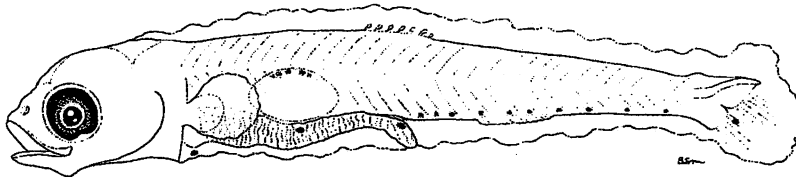


*Ceratoscopelus*  
*C. warmingii* 5.5 mm  
(Moser and Watson  
2001, 2006c)



**Diaphus**

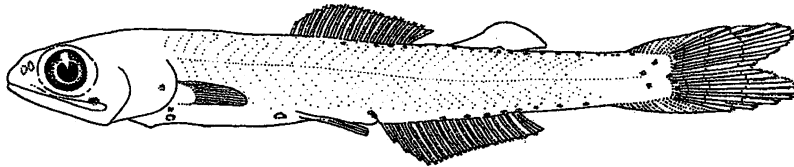
*D. theta* 5.8 mm  
(Moser and  
Ahlstrom 1996b)



**Lampa**  
*L. nobi*  
(Moser  
1996b)

**Gymnoscopelus**

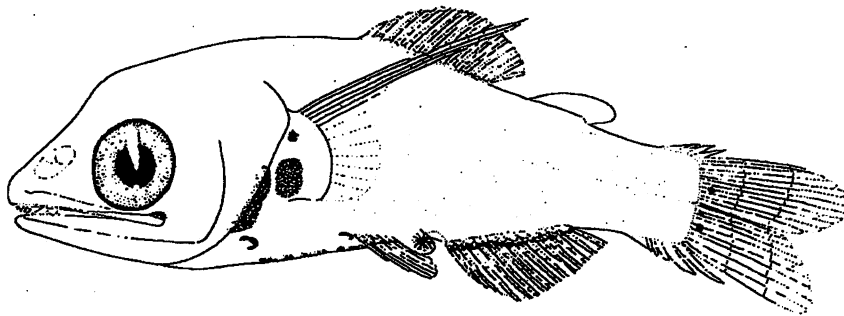
*G. aphyra* 23.5 mm  
(Moser and  
Ahlstrom 1972)



**Lampii**  
*L. proc*  
(Moser  
1972)

**Idiolychnus**

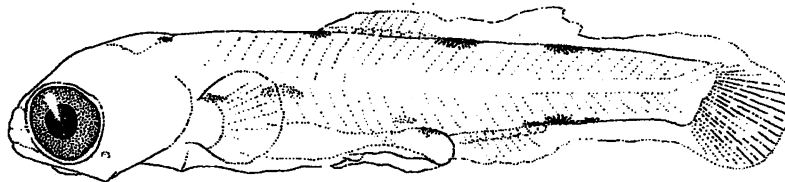
*I. urolampus* 7.2 mm  
(Moser and  
Ahlstrom 1974)



**Lepido**  
*L. gaus*  
(Moser  
2001, 2)

**Lampadena**

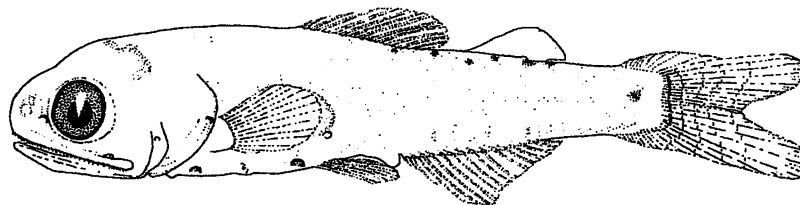
*L. urophaos* 6.8 mm  
(Moser and  
Ahlstrom 1996b)



**Lobiar**  
*L. gem*  
(Moser  
Ahlstr

**Lampanyctodes**

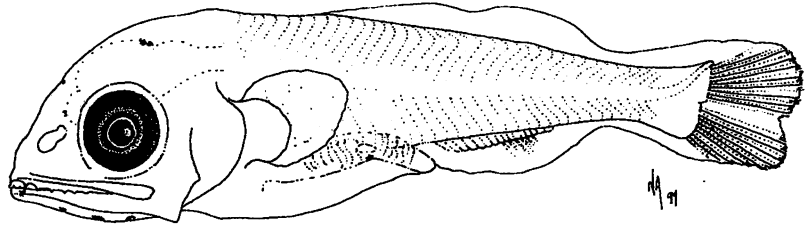
*L. Hectoris* 13.0 mm  
(Ahlstrom et al.  
1976b)



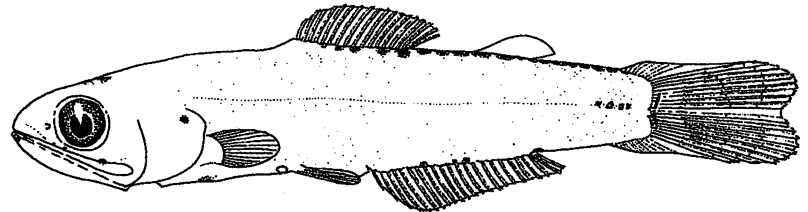
**Nanno.**  
*N. atru.*  
(Moser  
2001, 2)

**Notoly**  
*N. valc*  
(Mose:  
Ahlstr

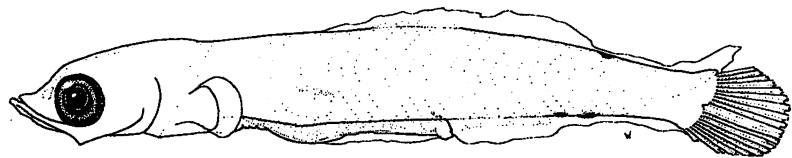
**Lampanyctus**  
*L. nobilis* 6.2 mm  
(Moser and Ahlstrom  
1996b)



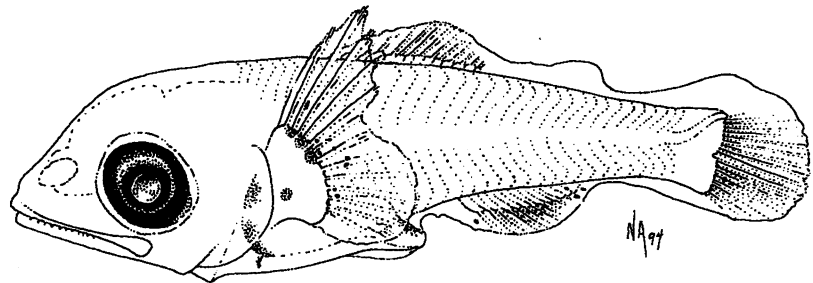
**Lampichthys**  
*L. procerus* 14.5 mm  
(Moser and Ahlstrom  
1972)



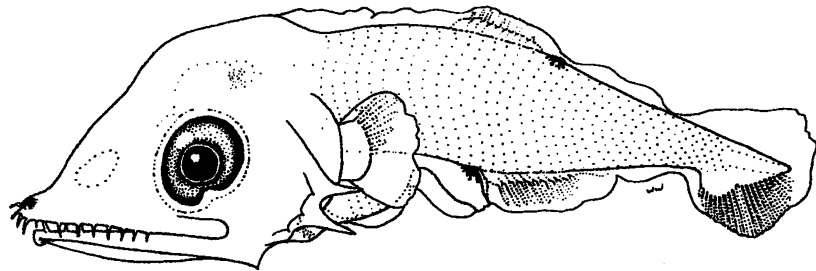
**Lepidophanes**  
*L. gaussi* 5.3 mm  
(Moser and Watson  
2001, 2006c)



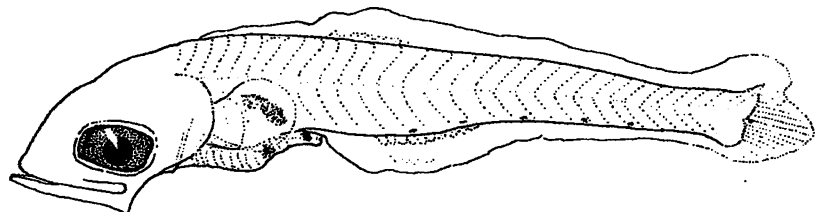
**Lobianchia**  
*L. gemellarii* 5.6 mm  
(Moser and  
Ahlstrom 1996b)



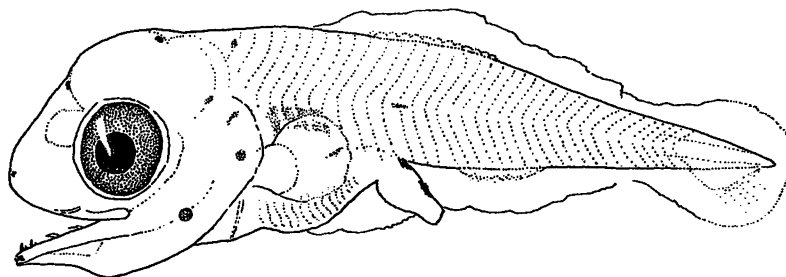
**Nannobranchium**  
*N. atrum* 4.6 mm  
(Moser and Watson  
2001, 2006c)



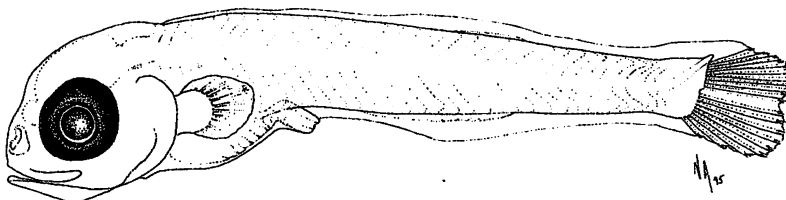
**Notolychnus**  
*N. valdiviae* 5.4 mm  
(Moser and  
Ahlstrom 1996b)



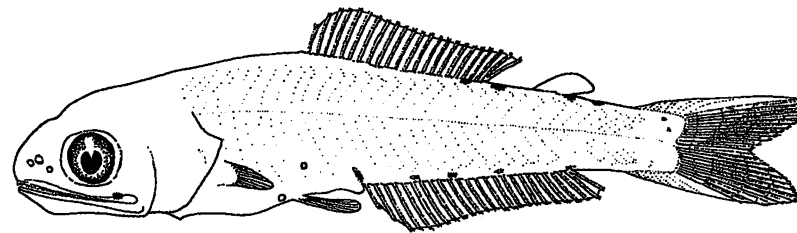
***Notoscopelus***  
*N. resplendens* 4.8 mm  
(Moser and Ahlstrom  
1996b)



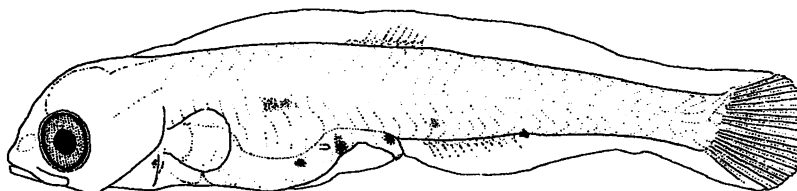
***Parvilux***  
*P. ingens* 7.8 mm  
(Moser and Ahlstrom  
1996b)



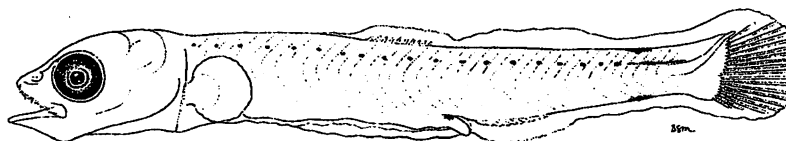
***Scopelopsis***  
*S. multipunctatus*  
13.4 mm  
(Moser and Ahlstrom  
1972)



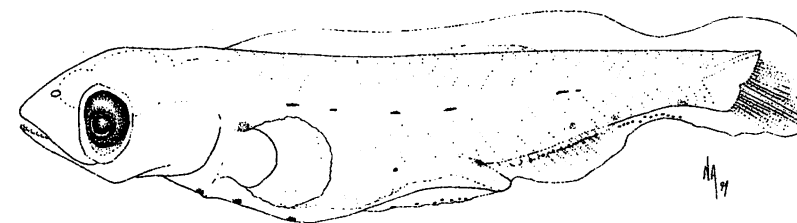
***Stenobranchius***  
*S. leucopsarus* 7.8 mm  
(Ahlstrom 1972)



***Taaningichthys***  
*T. minimus* 7.2 mm  
(Moser and Ahlstrom  
1996b)



***Triphoturus***  
*T. nigescens* 5.6 mm  
(Moser and Ahlstrom  
1996b)



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## Order Myctophiformes

Suborder	None
Family	<b>Neoscopelidae (Blackchins)</b>
Number of genera	3
Number of species	6

## GENERAL LIFE HISTORY

Distribution	Worldwide in tropical to subtropical regions (except <i>Solivomer</i> , known only from the tropical western Pacific).
Relative abundance	Adults apparently relatively rare to relatively common, larvae uncommon outside tropics.
Adult habitat	Small to medium size (< 30 cm) inhabitants of benthopelagic continental slope waters ( <i>Neoscopelus</i> ) and deep ocean midwaters ( <i>Scopelengys</i> ).

## EARLY LIFE HISTORY

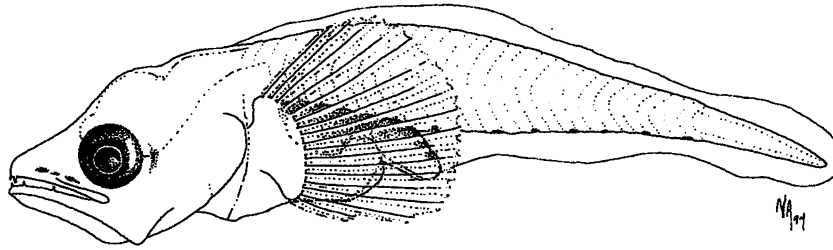
Mode of reproduction	Assumed to be oviparous with planktonic eggs and larvae.
Knowledge of ELH	Eggs unknown, larvae known for <i>Scopelengys</i> and for two of the three <i>Neoscopelus</i> species.
ELH Characters:	<b>Eggs:</b> unknown.

**Larvae:** notochord flexes at about 6–8 mm and transformation is at about 18–21 mm (size at hatching is unknown); moderately deep and robust body, large head, preanal length about 50–66% of body length, pectoral fins become large, especially in *Scopelengys*, and pectoral-fin rays form early, before notochord flexion; 29–35 myomeres, commonly about 29–31; *Neoscopelus* develops one or more small preopercular spines, larval *Scopelengys* lack head spines; pigmentation light through most of larval stage, with melanophores primarily 1) on ventral margin of tail, 2) on dorsum of gut, and 3) usually some externally and/or internally on head.

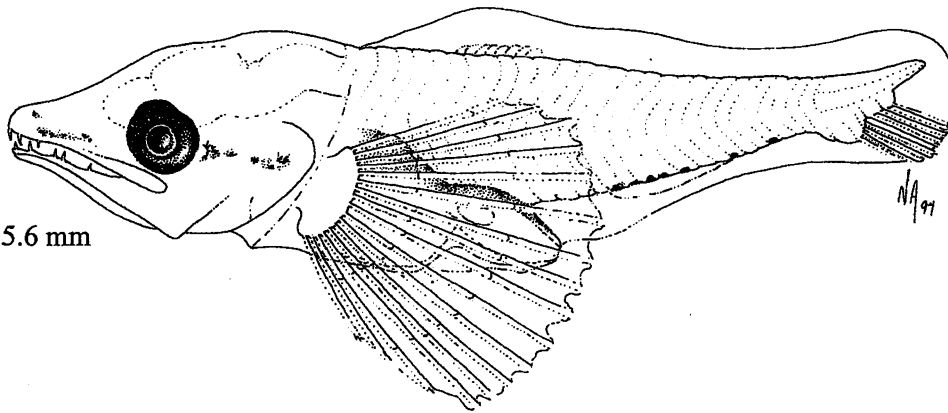
Example species:	<i>Scopelengys tristis</i> (Circumglobal in tropical-subtropical waters).
Meristics:	D: 11–13, A: 12–14, P1: 14–17, P2: 8 (abd.), V: 12–13+17–19=29–32, C: 6–9, 10+9, 7–8.

REFERENCES	Butler and Ahlstrom 1976, Fahay 2007a, Hulley 1984, Matarese et al. 1989, Moser 1996d, Moser and Watson 2001, 2006a, b, Nafpaktitis et al. 1977, Okiyama 1974, 1984, 1988a.
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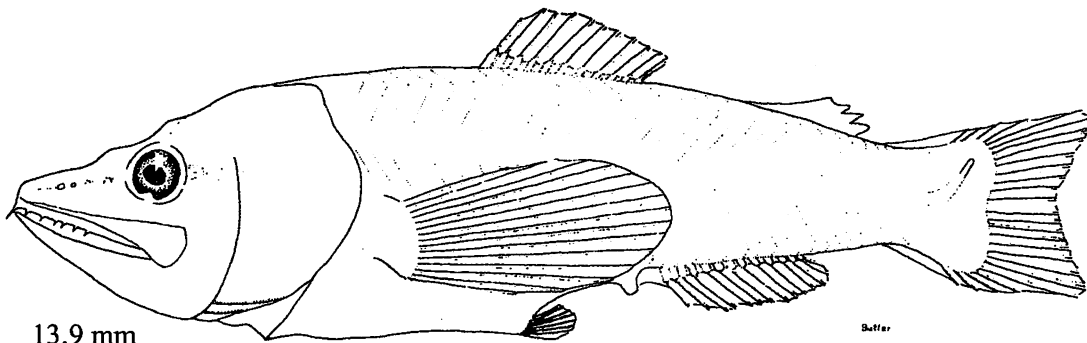
Myctophiformes/Neoscopelidae  
*Scopelengys tristis*  
from: Moser 1996d; Butler and Ahlstrom 1976



3.7 mm



5.6 mm



13.9 mm

Order

Suborder

Family

Number of

Number of

Genera

Distribution

Relationship

Adult

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**Order Myctophiformes**

Suborder	None
Family	<b>Myctophidae (Lanternfishes)</b>
Number of genera	≥ 32
Number of species	≥ 240

**GENERAL LIFE HISTORY**

Distribution	Inhabitants of all deep seas.
Relative abundance	Ubiquitous in all oceans; eggs occur infrequently but larvae common in plankton samples, especially in those made over deep shelf to deep basins.
Adult habitat	Small to medium size (< 35 cm) shallow- to deep-living fishes; most undergo daily vertical migration.

**EARLY LIFE HISTORY**

Mode of reproduction	Oviparous with planktonic eggs and larvae.
Knowledge of ELH	Eggs known for a few species, larvae known for all genera except <i>Hintonia</i> .

ELH Characters: **Eggs:** spherical to slightly oval, diameter about 0.7–0.9 mm, chorion smooth, thin and fragile, moderately wide perivitelline space, yolk segmented, with single oil globule about 0.1–0.3 mm in diameter.

**Larvae:** generally small at hatching, < 3 mm (approx. 2 mm); undergo notochord flexion at approx. 4–10 mm and transform in approx. 8–30 mm size range, depending on species; slender to robust to deep-bodied and compressed; most common shape is moderately slender; uncoiled, commonly sigmoid-shape gut ranging from short and compact (PAL approx. 30–40% BL) to long and trailing (PAL > 100% BL), most commonly PAL approx. 50–60% BL, prominent (usually) transverse mucosal folds present; eyes elliptical (Myctophinae) with ventral mass of choroid tissue in some species, or round to somewhat oval (Lampanyctinae); 27–41 myomeres (most commonly 30's); no spines on head or pectoral girdle in most genera; Br2 photophore commonly forms first, during postflexion stage; pigmentation variable within the family, ranging from absent to moderately heavy, typically light to moderate with melanophores most commonly on gut and ventral margin of tail, some genera with characteristic dorsal, lateral, or fin pigment.

Example species: MYCTOPHINAE *Diogenichthys atlanticus* (Warm-water cosmopolite).  
Meristics: D: 10–12, A: 14–18, P1: 12–15, P2: 8 (abd.), V: 13–

14+18-20=31-35, C: 8-9, 10+9, 8-9.

*Myctophum aurolaternatum* (Tropical-subtropical Indo-Pacific and Eastern Pacific).

Meristics: D: 9-12, A: 21-27, P1: 13-16, P2: 8 (abd.), V:18-19+25-26=42-46, C: 8, 10+9, 7-8.

LAMPANYCTINAE *Ceratoscopelus townsendi* (Warm and temperate Atlantic, Pacific, and Indian Oceans).

Meristics: D: 13-15, A: 13-16, P1: 13-15, P2: 8 (abd.), V:16-17+20-21=35-38 C: 6-7, 10+9, 6-7.

*Nannobranchium ritteri* (Subarctic-Transitional North Pacific and California Current).

Meristics: D: 12-16, A: 16-19, P1: 10-13, P2: 8 (abd), V:15-16+20-22=35-38, C: 7-8, 10+9, 7-8.

## REFERENCES

General: Wisner 1976, Nafpaktitis et al. 1977, Hulley 1986

### MYCTOPHINAE

*Benthoema*: Badcock and Merrett 1976, Beltrán-León and Herrera 2000, Fahay 1983, 2007a, Moser and Ahlstrom 1970, 1974, 1996b, Moser and Watson 2001, 2006c, Moser et al. 1984, Olivar et al. 1999, Ozawa 1986c, 1988d, Pertseva-Ostroumova 1964, 1974, Shiganova 1977.

*Centrobranchus*: Fahay 2007a, Moser and Ahlstrom 1970, 1974, 1996b, Moser and Watson 2001, 2006c, Moser et al. 1984, Ozawa 1986c, 1988d, Pertseva-Ostroumova 1964, 1974.

*Diogenichthys*: Ahlstrom 1965, Beltrán-León and Herrera 2000, Castillo 1979, Fahay 1983, 2007a, Moser 1981, Moser and Ahlstrom 1970, 1996b, Moser and Watson 2001, 2006c, Moser et al. 1984, Olivar and Fortuño 1991, Ozawa 1986c, 1988d, Pertseva-Ostroumova 1964, 1974, Shiganova 1977, Tåning 1918.

*Electrona*: Dekhnik and Sinukova 1966, Efremenko 1983, Fahay 1983, 2007a, Matarese et al. 1989, Moser and Ahlstrom 1970, 1996b, Moser and Watson 2001, 2006c, Moser et al. 1984, Sanzo 1939, Tåning 1918, Tortonese 1956.

*Gonichthys*: Beltrán-León and Herrera 2000, Castillo 1979, Dekhnik and Sinukova 1966, Fahay 1983, Moser and Ahlstrom 1970, 1974, 1996b, Moser and Watson 2001, 2006c, Moser et al. 1984, Pertseva-Ostroumova 1964, Shiganova 1977, Tåning 1918, Tortonese 1956.

*Hygophum*: Balbontín and Orellana 1983, Berdar and Cavaliere 1979, Cavaliere and Berdar 1977, Dekhnik and Sinukova 1966, Fahay 1983, 2007a, Miller et al. 1979, Moser 1981, Moser and Ahlstrom 1970, 1974, 1996b, Moser and Watson 2001, 2006c, Moser et al. 1984, Olivar 1988, Olivar and Fortuño 1991, Olivar and Palomera 1994, Ozawa 1986c, 1988d, Pertseva-Ostroumova 1974, Sanzo 1918a, b, Shiganova 1974, 1975a, 1977, Tåning 1918, Tortonese 1956, Zhudova 1969.

*Krefflichthys*: Efremenko 1983, Moser and Ahlstrom 1974, Moser et al. 1984.

*Loweina*: Beltrán-León and Herrera 2000, Evseenko et al. 1998, Fahay 1983, 2007a, Matarese et al. 1989, Moser 1981, Moser and Ahlstrom 1970, 1974, 1996b, Moser and Watson 2001, 2006c, Moser et al.

1984, Olivar and Fortuño 1991, Pertseva-Ostroumova 1964.

*Metelectrona*: Moser and Ahlstrom 1974, Moser et al. 1984.

*Myctophum*: Beltrán-León and Herrera 2000, Castillo 1979, Fahay 1983, 2007a, Moser 1981, Moser and Ahlstrom 1970, 1974, 1996b, Moser and Watson 2001, 2006c, Moser et al. 1984, Olivar and Fortuño 1991, Olivar et al. 1999, Ozawa 1986c, 1988d, Pertseva-Ostroumova 1964, 1974.

*Protomyctophum*: Matarese et al. 1989, Moser and Ahlstrom 1970, 1996b, Moser et al. 1984, Olivar and Fortuño 1991, Ozawa 1988d, Pertseva-Ostroumova 1964, 1967, Yefremenko 1976.

*Symbolophorus*: Ahlstrom 1965, Beltrán-León and Herrera 2000, Matarese et al. 1989, Moser and Ahlstrom 1970, 1974, 1996b, Moser and Watson 2001, 2006c, Moser et al. 1984, Olivar and Beckley 1994, Olivar and Rubiés 1986, Ozawa 1986c, 1988d, Pertseva-Ostroumova 1964, 1974, Zelck et al. 1993.

*Tarletonbeania*: Ahlstrom 1965, Bolin 1939, Matarese et al. 1989, Moser and Ahlstrom 1970, 1974, 1996b, Moser et al. 1984, Pertseva-Ostroumova 1964, 1974.

#### LAMPANYCTINAE

*Bolinichthys*: Beltrán-León and Herrera 2000, Fahay 1983, 2007a, Moser and Ahlstrom 1974, 1996b, Moser and Watson 2001, 2006c, Ozawa 1986c, 1988d, Pertseva-Ostroumova 1964.

*Ceratoscopelus*: Amaoka et al. 1992, Badcock and Araújo 1988, Belyanina 1982, Fahay 1983, 2007a, Dekhnik and Sinukova 1966, Matarese et al. 1989, Moser and Ahlstrom 1972, 1974, 1996b, Moser and Watson 2001, 2006c, Moser et al. 1984, Ozawa 1986c, 1988d, Shiganova 1977, Miller et al. 1979, Tåning 1918, Tortonese 1956.

*Diaphus*: Belyanina 1986, Dekhnik and Sinukova 1966, Fahay 1983, 2007a, Matarese et al. 1989, Moser and Ahlstrom 1974, 1996b, Moser and Watson 2001, 2006c, Moser et al. 1984, Olivar 1987a, Pertseva-Ostroumova 1964, Sassa et al. 2003, Shiganova 1977, Sparta 1952, Tåning 1918, Tortonese 1956.

*Gymnoscopelus*: Belyanina and Kovalevskaya 1979, Moser and Ahlstrom 1972, Pertseva-Ostroumova 1964, 1977, Shiganova 1977, Yefremenko 1977.

*Idiolychnus*: Moser and Ahlstrom 1974.

*Lampadena*: Fahay 1983, 2007a, Matarese et al. 1989, Miller et al. 1979, Moser 1981, Moser and Ahlstrom 1972, 1974, 1996b, Moser and Watson 2001, 2006c, Moser et al. 1984, Olivar et al. 1999, Ozawa 1986c, 1988d.

*Lampanyctodes*: Ahlstrom et al. 1976b, Moser et al. 1984, Robertson 1977.

*Lampanyctus*: Beltrán-León and Herrera 2000, Dekhnik and Sinukova 1966, Fahay 1983, 2007a, Miller et al. 1979, Moser and Ahlstrom 1996b, Moser and Watson 2001, 2006c, Moser et al. 1984, Olivar and Beckley 1997, Olivar and Fortuño 1991, Tåning 1918, Tortonese 1956.

*Lampichthys*: Moser and Ahlstrom 1972, Moser et al. 1984.

*Lepidophanes*: Zhudova 1969, Moser and Ahlstrom 1972, 1974, Shiganova 1977, Moser 1981, Fahay 1983, Moser et al. 1984, Moser

and Watson 2006c.

*Lobianchia*: Cavaliere and Berdar 1976, Dekhnik and Sinukova 1966, Fahay 1983, 2007a, Moser 1981, Moser and Ahlstrom 1974, 1996b, Moser and Watson 2001, 2006c, Moser et al. 1984, Olivar and Fortuño 1991, Olivar et al. 1999, Ozawa 1986c, 1988d, Pertseva-Ostroumova 1964, 1974, Sanzo 1931b, Shiganova 1977, Tåning 1918, Tortonese 1956.

*Nannobranchium*: Ahlstrom 1965, Amaoka et al. 1992, Bolin 1939, Fahay 2007a, Matarese et al. 1989, Moser 1981, Moser and Ahlstrom 1974, 1996b, Moser and Watson 2001, 2006c, Moser et al. 1984, Olivar 1985.

*Notolychnus*: Fahay 1983, 2007a, Moser and Ahlstrom 1974, 1996b, Moser and Watson 2001, 2006c, Moser et al. 1984, Ozawa 1988d, Pertseva-Ostroumova 1964, Shiganova 1975b, Tåning 1918.

*Notoscopelus*: Badcock and Merrett 1976, Beltrán-León and Herrera 2000, Belyanina 1982, Fahay 1983, 2007a, Matarese et al. 1989, Moser 1981, Moser and Ahlstrom 1972, 1974, 1996b, Moser and Watson 2001, 2006c, Moser et al. 1984, Ozawa 1986c, 1988d, Palomera 1983, Shiganova 1977, Tåning 1918, Tortonese 1956, Zhudova 1969.

*Parvilux*: Matarese et al. 1989, Moser and Ahlstrom 1974, 1996b, Moser et al. 1984.

*Scopelopsis*: Moser and Ahlstrom 1972, Moser et al. 1984.

*Stenobranchius*: Ahlstrom 1965, 1972, Fast 1960, Matarese et al. 1989, Moser and Ahlstrom 1974, 1996b, Moser et al. 1984.

*Taaningichthys*: Fahay 1983, 2007a, Matarese et al. 1989, Moser and Ahlstrom 1972, 1996b, Moser and Watson 2001, 2006c, Moser et al. 1984, Ozawa 1986c, 1988d.

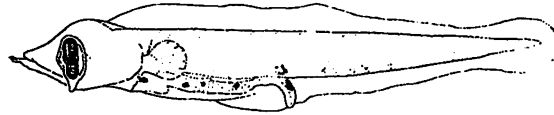
*Triphoturus*: Ahlstrom 1965, 1972, Beltrán-León and Herrera 2000, Evseenko 2008, Moser 1981, Moser and Ahlstrom 1996b, Moser et al. 1984, Ozawa 1986c, 1988d.

Myctophiformes/Myctophidae/Myctophinae  
*Diogenichthys atlanticus*  
from: Moser and Ahlstrom 1970

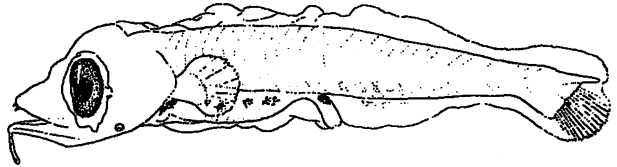
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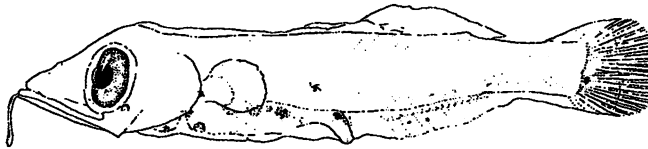
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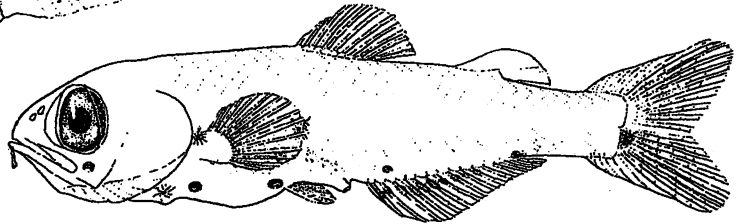
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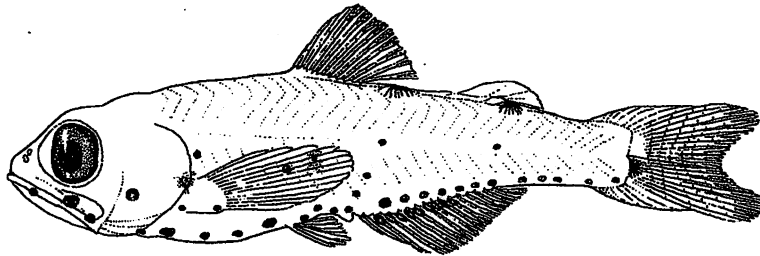
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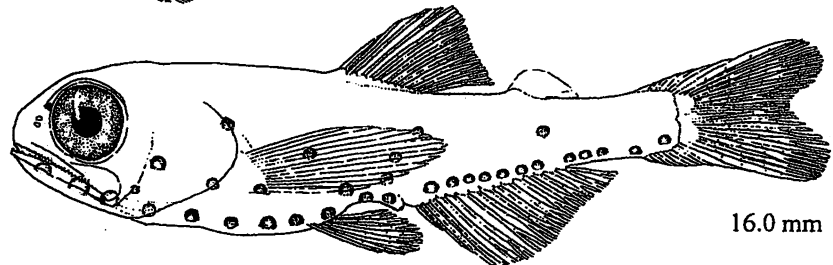
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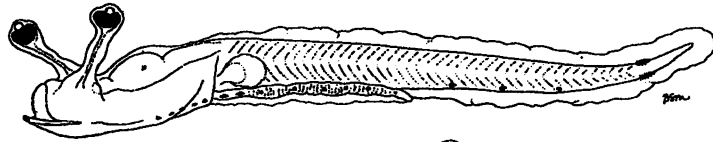


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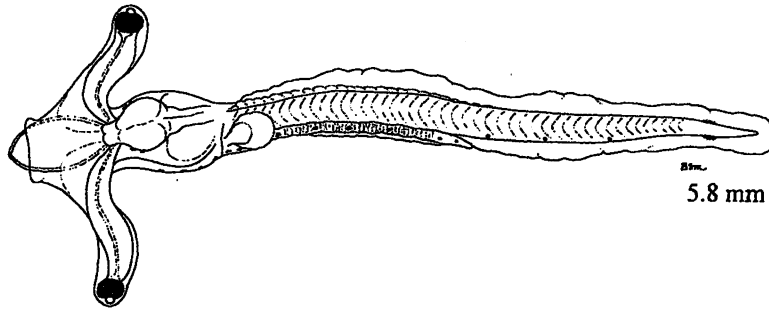


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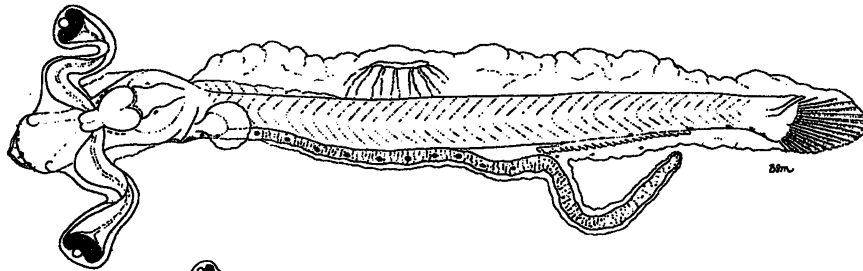
Myctophiformes/Myctophidae/Myctophinae  
*Myctophum aurolaternatum*  
from: Moser and Ahlstrom 1996b



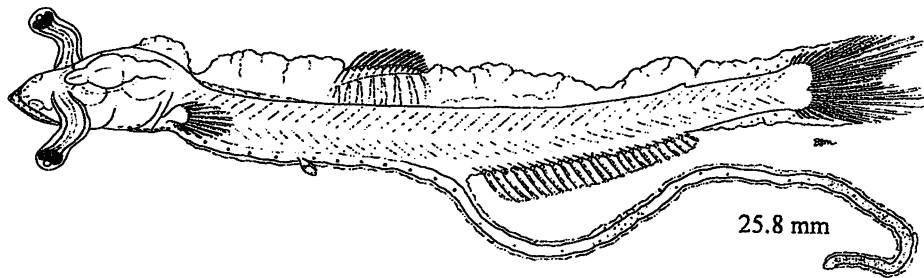
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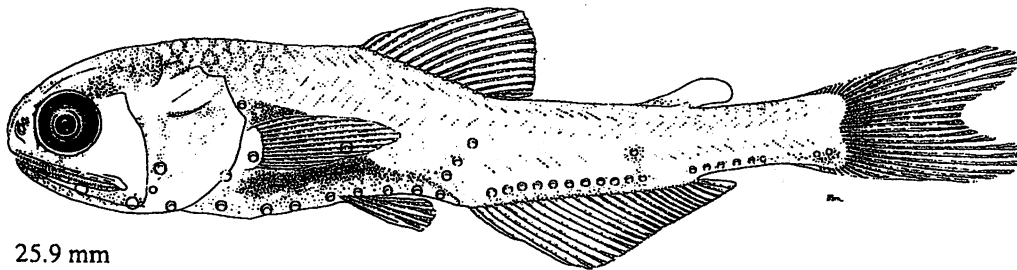
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12.5 mm



25.8 mm



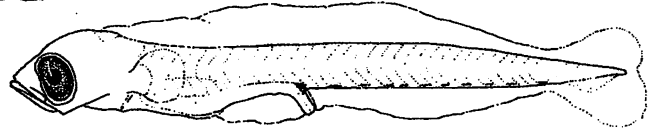
25.9 mm



Myctophiformes/Myctophidae/Lampanyctinae  
*Ceratoscopelus townsendi*  
from: Moser and Ahlstrom 1996b



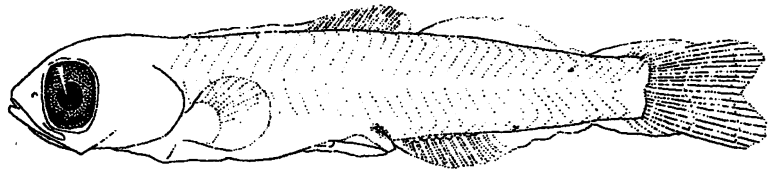
3.1 mm



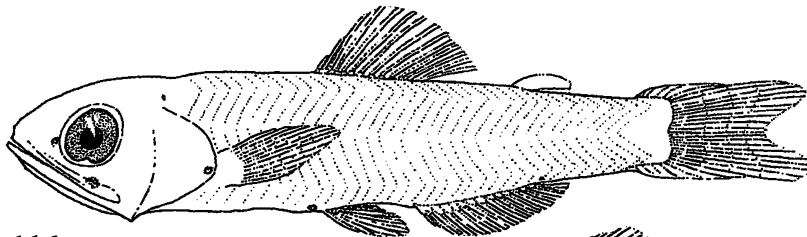
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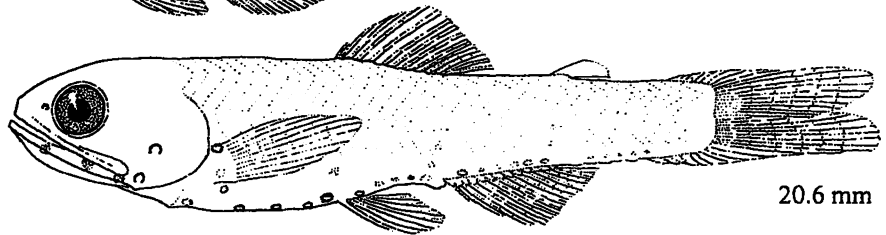
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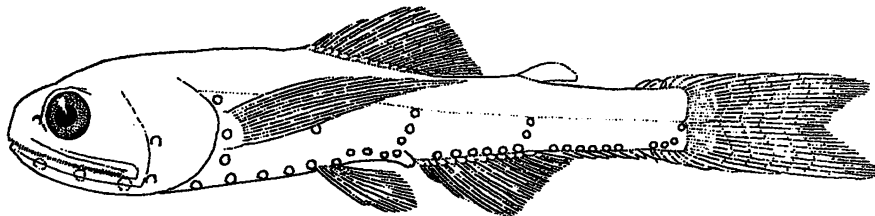
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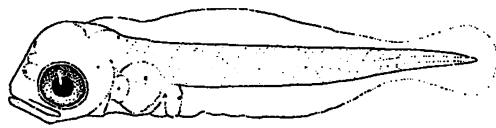


20.6 mm

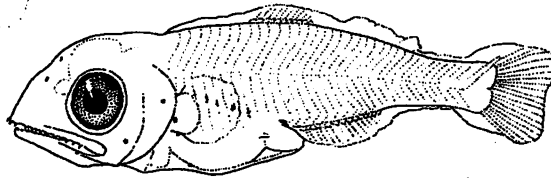


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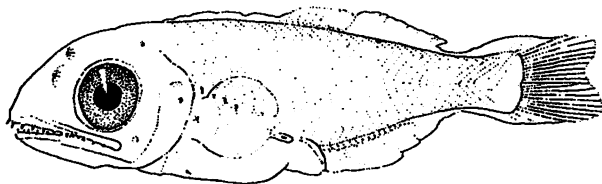
Myctophiformes/Myctophidae/Lampanyctinae  
*Nannobranchium ritteri*  
from: Moser and Ahlstrom 1996b



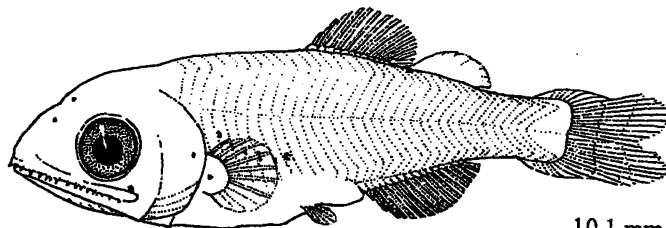
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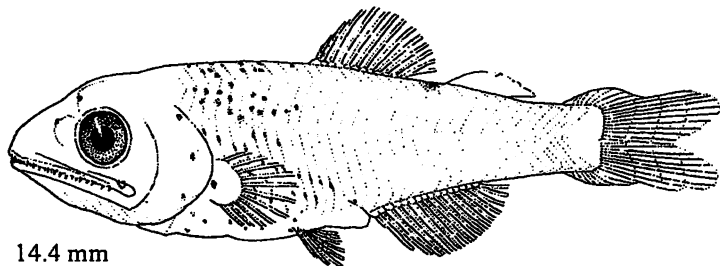
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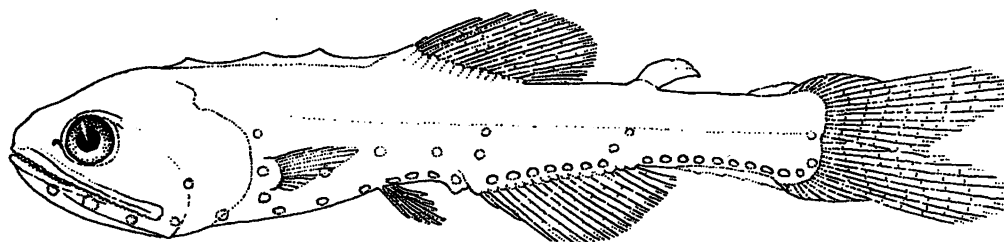
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10.1 mm



14.4 mm



22.5 mm

**IDENTIFICATION OF EGGS AND LARVAE OF MARINE FISHES**  
edited by Arthur W. Kendall, Jr.

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<b>Chapter 3</b> .....	<b>51</b>
<b>Osmeriformes: Morgan S. Busby</b>	
ARGENTINOIDEI:	
Bathylagidae: <i>Bathylagus pacificus</i>	
OSMEROIDEI:	
Osmeridae: <i>Mallotus villosus</i>	
<b>Chapter 4</b> .....	<b>59</b>
<b>Stomiiformes: William Watson and H. Geoffrey Moser</b>	
Gonostomatidae: <i>Cyclothone signata</i>	
Sternoptychidae: <i>Argyropelecus sladeni</i>	
Phosichthyidae: <i>Vinciguerrria lucetia</i>	
Stomiidae: <i>Bathophilus flemingi</i> , <i>Idiacanthus antrostomus</i>	
<b>Chapter 5</b> .....	<b>79</b>
<b>Aulopiformes: William Watson, H. Geoffrey Moser, and David A. Ambrose</b>	
Synodontidae: <i>Synodus lucioceps</i>	
Notosudidae: <i>Scopelosarus</i> sp.	
Scopelarchidae: <i>Scopelosaurus guentheri</i>	
Evermannellidae: <i>Evermannella ahlstromi</i>	
Paralepididae: <i>Lestidiops ringens</i>	
<b>Chapter 6</b> .....	<b>95</b>
<b>Myctophiformes: H. Geoffrey Moser and William Watson</b>	
Neoscopelidae: <i>Scopelengys tristis</i>	
Myctophidae: <i>Diogenichthys atlanticus</i> , <i>Myctophum aurolaternatum</i> , <i>Ceratoscopelus townsendi</i> , <i>Nannobrachium ritteri</i>	
<b>Chapter 7</b> .....	<b>113</b>
<b>Lampridiformes: Ann C. Matarese and Deborah M. Blood</b>	
Trachipteridae: <i>Trachipterus altivelis</i>	
<b>Chapter 8</b> .....	<b>119</b>
<b>Ophidiiformes: Michael P. Fahay</b>	
OPHIDIOIDEI	
Carapidae: <i>Echiodon dawsoni</i>	
Ophidiidae	
Brotulinae: <i>Brotula barbata</i>	
Brotulotaeniinae: <i>Lamprogrammus</i> , <i>Brotulotaenia</i>	
Ophidiinae: <i>Ophidion marginatum</i> , <i>Ophidion selenops</i>	
Neobythitinae: <i>Abyssobrotula galathaea</i> , <i>Bassozetus compressus</i>	
BYTHITOIDEI	
Bythitidae: <i>Cataetyx rubrirostris</i> , <i>Brosomphycis marginata</i>	
Aphyonidae: <i>Barathronus pacifica</i>	
<b>Chapter 9</b> .....	<b>137</b>
<b>Gadiformes: Ann C. Matarese and Deborah M. Blood</b>	
Bregmacerotidae: <i>Bregmaceros bathymaster</i>	
Macrouridae: <i>Coryphaenoides acrolepis</i>	
Moridae: <i>Microlepidium verecundum</i>	
Gadidae: <i>Theragra chalcogramma</i>	
Merlucciidae: <i>Merluccius productus</i>	

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