

**Single Oil Globule "Odd Types"** (listed by size)

Oct 5, 1994

Measurements for egg chorion and oil globule diameters were made to the nearest 0.01 millimeter. Sizes within parentheses represent minimum and maximum values observed.

**Unk #187:** (.50), og (.10); sculpted; (Myctophidae?).

**Unk #199:** .68-.76 (.65-.79), inner .60 (.60-.61), og (.20-.23), Double membrane, sculpted, outer memb deciduous.

**Unk #140:** (.74), og (.21), segmented yolk, pustules on chorion, melan on embryo, oil g and yolk.

**Unk #223:** .74 (.72-.76), og .14 (.13-.16); yolk homogeneous to finely segmented (in part), pigm as in *T. adpersus* but with oil g.

**Unk #178:** .75-.77 (.73-.78), og .17-.18 (.15-.19); yolk finely segmented (in part), pigm mostly dorsal, reminiscent of *P. dentatus*.

**Unk #219:** (.78), inner (.70), og (.21); double membrane, no pigment at 5/8~.

**Unk #208:** .78-.79 (.78-.80), og .18-.22 (.18-.23); segmented yolk.

**Unk #221:** (.82), og "small"; yolk strongly segmented.

**Unk #210:** .82 (.78-.85), og .15 (.15-.17); yolk strongly segmented, no melan, 7/8~.

**Unk #237:** (.84), og (.20); segmented yolk (maybe); small patch of melan on yolk ventrum; melan on embryo are few, large and dark (full~).

**Unk #173:** (.93-.99), inner (.89-.95), og (.10); double membrane, yolk segmented.

**Unk #106:** .91-.94 (.88-.95), og .17(.10-.19); yolk segmented, approx 45-50 myomeres; melan only in caudal finfold at 1 1/16~.

*Ammodytes* spp. .81 (.77-.98) x .75 (.69-.92), og .19 (.18-.22) (Fahay 1983 reported og=.27); irregular shape, not quite spherical.

**Unk #220:** (1.10-1.14), inner(1.07-1.09), og(.30-.35); dbl membrane, yolk segmented; no melanophores at 7/8~.

**Unk #201:** 1.16 (1.11-1.18), inner 1.12 (1.05-1.14), og .32 (.30-.35); double membrane, segmented yolk; no pigmentation at 1/2~.

*Brosme brosme* 1.28-1.31 (1.15-1.46), og .26-.28 (.24-.30); egg membrane finely pitted; dend and closely spaced melan in 2 distinct dors-lat rows.

**Unk #232:** (1.42), og (.30); copper tint to membrane, yolk partially segmented (?); at 1 1/8~ melan on head, profusely scatt at mid-body, then dbl rows to 95% BL; patches on yolk near head and abdomen.

Uranoscopidae 1.51-1.59 (1.40-1.69), og .27-.33 (.22-.35); fine sculpturing or pitting of surface.

**Unk #205:** 1.48 (1.45-1.53), og (.10-.12); sculpted, low relief, orange-peel like.

*Maurolicus muelleri* 1.54-1.59 (1.37-1.75), inner .88-.89 (.84-.92), og .23-.24 (.21-.25); double membrane, outer strongly sculpted, yolk segmented; no pigmentation (to 7/8~); slender embryo.

*Lophius americanus*: double membrane; inner diam=(1.43-1.70), outer diam= (1.60-1.90), outer memb is deciduous, irregular and often lost; og (.42-.50); spawned in a veil.

**Unk #239:** (1.80), og (0.36); slightly non-spherical; egg membrane opaque, hard, and yellowish; yolk indistinctly segmented; no pigmentation (3/4~); head large in comparison to rest of embryo.

**Unk #191:** 1.89 (1.83-1.95), lesser diam 1.76 (1.60-1.76), og (.53); oval shape; pigment present (info lacking).

Unknown #187 Taxon Code: 100 000 187

Oct 16, 1992

[tentative identification: Myctophidae]

Shape and size: Spherical; (.50)  
 Oil g: Single; (.10)  
 Egg membrane: Sculpted  
 Yolk:  
 Pv space:  
 Myomeres:  
 Spawning: GB: Oct (west, offshore)

Pigmentation and form:

[No comments or specimens survived the fire; maybe some later.]

Unknown #187, observed sizes

Jul 18, 1989

Summary: outer diam (point to point): (.50)  
 mesh size (point to point):  
 inner diam, smooth:  
 oil globule diam: (.10)

Area	Mon	Obs	Outer diam				Mesh size				Inner diam				Cruise	sta			
			Mean	SD	Min	Max	Obs	Mean	SD	Min	Max	Obs	Mean	Min			Max		
GB w off	Oct	1e	.-	.-	.50	.50	-	.-	.-	.-	.-	.-	.-	1	.-	.10	.10	AL8010	103

\* Observations are of late-stage eggs unless noted otherwise.

Unknown #199 Taxon Code: 100 000 199

Oct 19, 1992

Shape and size: Spherical; Double membrane, sculpted  
 outer diam, pt-to-pt, .68-.76 (.65-.79)  
 "mesh" size, pt-to-pt, (.10-.11)  
 inner diam, smooth, .60 (.60-.61)

Oil g: Single; (.20-.23)

Egg membrane: Outer membrane sculpted in a raised hexagonal pattern.  
 This outer membrane is somewhat deciduous or fragile and when it is broken away the inner membrane exposed is clear and smooth.

Yolk: Homogeneous

Pv space:

Myomeres:

Spawning: GOM: Dec  
 GB: Oct  
 SNE: Jan, Mar, Oct, Nov  
 MAB: Mar, Sep, Nov

Pigmentation and form:

[No information on this, yet.]

Unknown #199, observed sizes

Jul 18, 1989

Summary: outer diam (point to point): .68-.76 (.65-.79)  
 mesh size (point to point): (.10-.11)  
 inner diam, smooth: .60 (.60-.61)  
 oil globule diam: (.20-.23)

Area	Mon	Obs*	Outer diam				Mesh size				Inner diam				Oil g diam				Cruise	Sta			
			Mean	SD	Min	Max	Obs	Mean	SD	Min	Max	Obs	Mean	SD	Min	Max	Obs	Mean			SD	Min	Max
SN off	Mar	6e	.69	.017	.67	.71	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	AL8402	203
SN off	Mar	1e	.-	.-	.79	.79	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	AL8402	210
SN off	Mar	2e	.68	.035	.65	.70	-	-	-	-	-	-	-	-	-	1	.-	.-	.23	.23	-	AL8402	234
MA off	Mar	2e	.76	.007	.75	.76	-	-	-	-	-	2	.60	.007	.60	.61	2	.-	.-	.20	.20	AL8402	8

\* Observations are of late-stage eggs unless noted otherwise.

Unknown #140 Taxon Code: 100 000 140

Oct 16, 1992

Shape and size: Spherical; (.74)  
 Oil g: Single; (.21)  
 Egg membrane: Pustules on chorion (from original description card)  
 Yolk: Segmented  
 Pv space:  
 Myomeres: normal (26-28)  
 Spawning: GB: Nov  
 MAB: Jul and Nov

Pigmentation and form:

**MIDDLE**

**la-Mid, 5/8~:** Oil g ant-vent in position. Melan on embryo, yolk and oil g. Melan small (not punct) dark, scatt over h-brain then back as 2 loose dors-lat rows, diminishing post and ending at approx 9/10 BL; 1 melan directly vent to ttip [on yolk?]. A few (4) melan widely scatt on yolk, a few on prox surface of oil g.

Unknown #140, observed sizes

Summary: (.74), og (.21)

Area	Mon	Obs*	Egg diameter				Oil globule diameter				Cruise	Sta	
			Mean	SD	Min	Max	Obs	Mean	SD	Min			Max
MA s	Jul	1m	.-	.-	.74	.74	1	.-	.-	.21	.21	EV8006	3

\* Observations are of late-stage eggs unless noted otherwise.

Unknown #223 Taxon Code: 100 000 223

Sep 23, 1992

Shape and size: Spherical; .74 (.72-.76)

Oil g: Single; .14 (.13-.16), antero-ventral at 7/8~.

Egg membrane: Single, smooth, clear and colorless

Yolk: Homogeneous to finely segmented in part.

Pv space: Narrow (normal)

Myomeres: approx 15 or 16 preanus, 17 or 18 post., =32 to 34 total

Spawning: MAB: Sep  
SAB: Aug

Pigmentation and form:

**LATE**

7/8~: Punct melan occur from between eyes in some, or from trans bar at posterior part of m-brain, posteriad as dors-lat series to h-brain and as 2 dors-lat rows to 9/10 BL (like *T. adspersus* but with oil g). No melan ventral on body; none in finfold or on yolk or on oil g.

Unknown #223, observed sizes

Jul 19, 1989

Summary: .74 (.72-.76), og .14 (.13-.16)

Area	Mon	Obs*	Egg diameter				Oil globule diameter				Cruise	Sta	
			Mean	SD	Min	Max	Obs	Mean	SD	Min			Max
SAB	Aug	12	.74	.011	.72	.76	9	.14	.011	.13	.16	DL8507	18

\* Observations are of late-stage eggs unless noted otherwise.

Shape and size: Spherical; .75-.77 (.73-.78)  
 Oil g: Single; .17-.18 (.15-.19)  
 Egg membrane: Smooth, clear and colorless  
 Yolk: Finely segmented, in part; not very noticeable  
 Pv space: Narrow (normal)  
 Myomeres: approx 25 to 30 (normal)  
 Spawning: MAB: Apr, Aug  
 SAB: Apr

Pigmentation and form:

**LATE**

7/8~: Melan present on embryo, not on yolk (not sure if on oil g or not, too faded to tell). A couple melan on head, then tend to trans bar between m- and h-brain, outline h-brain, then tend to converge to dors mid-line row back to about 7/8 BL. A couple on or near h-gut; sometimes a couple ventral on post 1/4 of body. [The dorsal midline row is strong and reminiscent of that in *P. dentatus*].

Unknown #178, observed sizes

Jul 18, 1989

Summary: .75-.77 (.73-.78), og .17-.18 (.15-.19)

Area	Mon	Obs*	Egg diameter				Oil globule diameter				Cruise	Sta	
			Mean	SD	Min	Max	Obs	Mean	SD	Min			Max
MA s	Apr	3	.77	.009	.76	.78	3	.18	.004	.18	.18	EV8001	2
SA	Apr	1	.-	.-	.78	.78	1	.-	.-	.14	.14	DL8503	134
SA	Apr	11	.75	.019	.73	.78	11	.17	.010	.15	.19	DL8503	143

\* Observations are of late-stage eggs unless noted otherwise.

Unknown #219 Taxon Code: 100 000 219

Oct 20, 1992

Shape and size: Spherical; double membrane  
 outer diam: (.78)  
 inner diam: (.70)

Oil g: Single; (.21)  
 Egg membrane: Double membrane, outer is smooth, clear and colorless.  
 Yolk: Homogeneous  
 Pv space: Narrow (normal)  
 Myomeres:  
 Spawning: MAB: May (south, offshore)

Pigmentation and form:

**LATE**  
 5/8~: No pigmentation.

Unknown #219, observed sizes

Jul 19, 1989

Summary: outer diam: (.78)  
 inner diam: (.70)  
 oil globule diam: (.21)

Area	Mon	Obs*	Outer diam				Inner diam				Oil globule diam				Cruise	sta	
			Mean	SD	Min	Max	Mean	SD	Min	Max	Obs	Mean	SD	Min			Max
MA s off	May	1	.-	.-	.78	.78	.-	.-	.70	.70	1	.-	.-	.21	.21	AL8504	132

\* Observations are of late-stage eggs unless noted otherwise.



Unknown #208 Taxon Code: 100 000 208

Jan 28, 1994

Shape and size: Spherical; .78-.79 (.78-.80)

Oil g: Single; .18-.22 (.18-.23)

Egg membrane: Smooth, clear and colorless

Yolk: Segmented

Pv space: Narrow (normal)

Myomeres: Approx 40 (15 to 17 + 22 to 25)

Spawning: MAB: Jan, Mar  
SAB: Mar

Pigmentation and form:

**LATE**

7/8~: No pigmentation on embryo, yolk , or oil g. Slender embryo.

Unknown #208, observed sizes

Jan 28, 1994

Summary: .78-.79 (.78-.80), og .18-.22 (.18-.23)

Area	Mon	Obs*	Egg diameter				Oil globule diameter				Cruise	Sta	
			Mean	SD	Min	Max	Obs	Mean	SD	Min			Max
MA s	Mar	2e	.79	.013	.78	.80	2	.22	.013	.21	.23	AL8502	26
MA	Jan	1	.78	.-	.78	.78	1	.18	.-	.18	.18	DL8701	35

\* Observations are of late-stage eggs unless noted otherwise.

Unknown #221 Taxon Code: 100 000 221

Oct 20, 1992

Shape and size: Spherical; (.82)

Oil g: Single; "small" [the specimen examined had a ruptured oil g]

Egg membrane: Single, smooth, clear and colorless

Pv space: Narrow (normal)

Myomeres:

Spawning: MAB: May (south, offshore)

Pigmentation and form:

[No information on this, yet.]

Unknown #221, observed sizes

Jul 19, 1989

Summary: (.82), og ("small")

Area	Mon	Obs*	Egg diameter				Oil globule diameter				Cruise	Sta	
			Mean	SD	Min	Max	Obs	Mean	SD	Min			Max
MA s off	May	1e	.-	.-	.82	.82	0	.-	.-	.-	.-	AL8504	132

\* Observations are of late-stage eggs unless noted otherwise.

Unknown #210 Taxon Code: 100 000 210

Oct 4, 1994

Shape and size: Spherical; .82 (.78-.85)

Oil g: Single; .15 (.15-.19), ventral at ea-Mid, post at 7/8~.

Egg membrane: Smooth, clear and colorless

Yolk: Strongly segmented

Pv space:

Myomeres:

Spawning: SNE: Oct  
MAB: Jan, Jul  
SAB: Mar, Apr and Aug

Pigmentation and form:

**MIDDLE**

ea-Mid: No pigmentation.

**LATE**

7/8~: No pigmentation.

Unknown #210, observed sizes

Oct 4, 1994

Summary: .82 (.78-.85), og .15 (.15-.19)

Area	Mon	Obs*	Egg diameter				Oil globule diameter				Cruise	Sta	
			Mean	SD	Min	Max	Obs	Mean	SD	Min			Max
MA off	Jan	1e	.-	.-	.79	.79	1	.-	.-	.17	.17	DL8601	34
MA off	May	1	.-	.-	.85	.85	1	.-	.-	.19	.19	AL9305	15
SA	Mar	1	.-	.-	.78	.78	1	.-	.-	.15	.15	AL8502	31
SA	Mar	1m	.-	.-	.78	.78	1	.-	.-	.16	.16	AL8502	28
SA	Aug	2	.82	.042	.79	.85	2	.15	.000	.15	.15	DL8507	16

\* Observations are of late-stage eggs unless noted otherwise.

Unknown #237 Taxon Code: 100 000 237

Sep 30, 1992

Shape and size: Spherical; (.84)  
 Oil g: Single; (.20)  
 Egg membrane: Single, smooth, clear and colorless  
 Yolk: Segmented (I think -- based on 1 specimen, yolk partially opaque and broken up.)  
 Pv space: Narrow (normal)  
 Myomeres: 18 pre + 42 post = 60 total  
 Spawning: MAB: Aug (south)

Pigmentation and form:

**LATE**

**full~:** Anus at approx 50% BL. Melan large, dark and few; symmetrically paired on head -- 1 pr on snout, 1 pr between eyes, 1 pr dors-lat on mid-brain, 2 or 3 pr lat to h-brain. Then, on middle 1/2 of body, as single dorsal row of large melan, few in number, which seem to be slightly entering the dorsal finfold. None on post 1/5 of body; none on ventrum of body. There is a single small patch (or 1 large melan) on yolk ventrum, near oil g. A couple of minute melan are beneath the head. None seen on the oil g (but hard to see, due to yolk opacity).

Unknown #237, observed sizes

Oct 5, 1989

Summary: (.84), og (.20)

Area	Mon	Obs*	Egg diameter				Oil globule diameter				Cruise	Sta	
			Mean	SD	Min	Max	Obs	Mean	SD	Min			Max
MA s off Aug		1	.-	.-	.84	.84	1	.-	.-	.20	.20	DL8708	2

\* Observations are of late-stage eggs unless noted otherwise.

Unknown #173 Taxon Code: 100 000 173

Oct 16, 1992

Shape and size: Spherical; double membrane  
 outer; (.93-.99)  
 inner; (.89-.95)

Oil g: Single; (.10)

Egg membrane: Double membrane; (outer) smooth, clear and colorless

Yolk: Segmented

Pv space:

Myomeres:

Spawning: MAB: Mar, Apr, Jul, Aug

Pigmentation and form:

[No notes or comments here (yet).]

Unknown #173, observed sizes

Jul 18, 1989

Summary: outer diam: (.93-.99)  
 inner diam: (.89-.95)  
 oil globule diam: (.10)

Area	Mon	Obs*	Outer diam				Inner diam				Oil globule diam				Cruise	sta	
			Mean	SD	Min	Max	Mean	SD	Min	Max	Obs	Mean	SD	Min			Max
MA s	Jul	1e	.-	.-	.93	.93	.-	.-	.89	.89	1	.-	.-	<.30	<.30	EV8006	13
MA s	Aug	1e	.-	.-	.99	.99	.-	.-	.95	.95	1	.-	.-	.10	.10	BE7901	11

\* Observations are of late-stage eggs unless noted otherwise.

Unknown #106 Taxon Code: 100 000 163

Oct 16, 1992

Shape and size: Spherical; .91-.94 (.88-.95)  
 Oil g: Single; .17 (.10-.19)  
 Egg membrane:  
 Yolk: Strongly segmented  
 Pv space:  
 Myomeres: approx 45-50  
 Spawning: GOM: Jun  
 GB: Apr, Jun  
 SNE: Mar, Apr, Oct  
 MAB: Mar-May, Jul-Nov

Pigmentation:

**LATE**

**5/8~** Tail twisted and flexed; a slender embryo; no melanophores.

**1 1/16~:** The only melan noted are in the caudal-fin precursors, (1 dorsal and 3 terminal melan).

Unknown #106, observed sizes

Oct 16, 1992

Summary: .91-.94 (.88-.95), og .17 (.10-.19)

Area	Mon	Obs*	Egg diameter				Oil globule diameter				Cruise	Sta	
			Mean	SD	Min	Max	Obs	Mean	SD	Min			Max
GB s	Apr	1m	.-	.-	.94	.94	0	.-	.-	.-	.-	AL8602	232
GB s	Jun	2e	.93	.014	.92	.94	-	.-	.-	<.23	<.23	EV8004	124
SN off	Apr	1m	.-	.-	.88	.88	1	.-	.-	.19	.19	AL8701	136
MA	Mar	1e	.-	.-	.90	.90	0	.-	.-	.-	.-	KE8103	35
MA	Mar	1e	.-	.-	.92	.92	0	.-	.-	.-	.-	AL8402	8
MA n off	Mar	1	.-	.-	.95	.95	1	.-	.-	.19	.19	AL8701	1
MA off	May	1e,1m,1	.91	.021	.89	.92	2	.17	.026	.15	.17	DL8603	46
MA	Jul	1e,1	.94	.021	.92	.95	-	.-	.-	.10	.10	EV8006	12

\* Observations are of late-stage eggs unless noted otherwise.

*Ammodytes* spp. Taxon Code: 170 630 100

Feb 22, 1994

Shape and size: Irregular shape, not quite spherical (demersal egg)  
 Greater diam .81 (.77-.98)  
 Lesser diam .75 (.69-.92)  
 Oil g: Single; diam .19 (.18-.22); (0.27 rep. by Fahay, 1983)  
 Egg membrane:  
 Yolk:  
 Pv space:  
 Myomeres:  
 Spawning: GB: Nov, Dec  
 SNE: Nov, Dec, Feb  
 MAB: Nov, Dec, Feb

Pigmentation and form:

*Ammodytes* spp., observed sizes

Feb 22, 1994

Summary: Irregular shape, not quite spherical (demersal egg)  
 greater diam: (.98)  
 lesser diam: (.92)  
 oil globule diam: [.27] (Fahay, 1983)

Area	Mon	Obs*	Greater diam				Lesser diam				Oil globule diam				Cruise	sta	
			Mean	SD	Min	Max	Mean	SD	Min	Max	Obs	Mean	SD	Min			Max
GB	Dec	10	.81	.031	.77	.88	.75	.036	.69	.80	6	.19	.015	.18	.22	DL9014	89
SN	Dec	1	.-	.-	.98	.98	.-	.-	.92	.92	0	.-	.-	.-	.-	AL8012	87

\* Observations are of late-stage eggs unless noted otherwise.

Unknown #220 Taxon Code: 100 000 220

Oct 4, 1994

Shape and size: Spherical; double membrane  
 outer diam: (1.10-1.28)  
 inner diam: (1.07-1.09)

Oil g: Single; (.28-.35)

Egg membrane: Double membrane, outer is smooth, clear and colorless

Yolk: Strongly segmented

Pv space: Narrow (normal)

Myomeres:

Spawning: SNE: Nov  
 MAB: May, Aug and Nov, (south, offshore)

Pigmentation and form:

**LATE:**

7/8~: No pigmentation at this stage (cruise: DL9311, station: 170).

Unknown #220, observed sizes

Oct 4, 1994

Summary: outer diam: (1.10-1.28)  
 inner diam: (1.07-1.09)  
 oil globule diam: (.28-.35)

Area	Mon	Obs*	Outer diam				Inner diam				Oil globule diam				Cruise	sta	
			Mean	SD	Min	Max	Mean	SD	Min	Max	Obs	Mean	SD	Min			Max
SN off	Sep	1	.-	.-	1.28	1.28	.-	.-	1.07	1.07	1	.-	.-	.28	.28	DL9311	170
MA s off	May	1e	.-	.-	1.14	1.14	.-	.-	1.09	1.09	-	.-	.-	.-	.-	AL8504	132
MA s	Aug	1e	.-	.-	1.12	1.12	.-	.-	1.09	1.09	1	.-	.-	.35	.35	DL8507	25
MA s off	Nov	1e	.-	.-	1.10	1.10	.-	.-	1.07	1.07	1	.-	.-	.30	.30	DL8510	6

\* Observations are of late-stage eggs unless noted otherwise.



Unknown #201 Taxon Code: 100 000 201

Oct 20, 1992

Shape and size: Spherical; double membrane  
 outer diam, 1.16 (1.11-1.18)  
 inner diam, 1.12 (1.05-1.14)  
 Oil g: Single; .32 (.30-.35)  
 Egg membrane: Double, smooth, clear and colorless  
 Yolk: Segmented  
 Pv space:  
 Myomeres: approx 25 to 30 (normal)  
 Spawning: SNE: Oct, Nov, Jan (offshore)  
 MAB: Jan, Mar, Apr, Sep, Nov

Pigmentation and form:

**LATE**

**ea-Late, 1/2~:** No pigmentation.

Unknown #201, observed sizes

Feb 18, 1994

Summary: outer diam: 1.16 (1.11-1.18)  
 inner diam: 1.12 (1.05-1.14)  
 oil globule diam: .32 (.30-.35)

Area	Mon	Obs*	Outer diam				Inner diam				Oil globule diam				Cruise	sta	
			Mean	SD	Min	Max	Mean	SD	Min	Max	Obs	Mean	SD	Min			Max
GB e off	Oct	1	.-	.-	1.13	1.13	.-	.-	1.06	1.06	1	.-	.-	.33	.33	DL9011	246
SN s off	Nov	1	.-	.-	1.11	1.11	.-	.-	1.05	1.05	0	.-	.-	.-	.-	DL8510	89
SN off	Jan	1e	.-	.-	1.16	1.16	.-	.-	1.14	1.14	0	.-	.-	.-	.-	DL8601	62
MA	Mar	1e,1m,11	1.16	.021	1.14	1.18	1.12	.021	1.11	1.14	3	.32	.028	.30	.35	AL8602	59
MA off	Apr	1m	.-	.-	1.16	1.16	.-	.-	1.10	1.10	1	.-	.-	.30	.30	DL8503	97
MA n off	Sep	1e,1	1.16	.014	1.15	1.17	1.12	.014	1.11	1.13	-	.-	.-	.32	.32	AL8408	63

\* Observations are of late-stage eggs unless noted otherwise.

*Brosme brosme* Taxon Code: 148 010 701

Feb 4, 1994

Shape and size: Spherical; 1.28-1.31 (1.15-1.46)

Oil g: Single; 0.26-0.28 (0.24-0.30)

Egg membrane: Fine pores visible

Yolk:

Pv space:

Myomeres:

Spawning: GOM: Apr-Nov  
 GB: Apr-Oct  
 SNE: Apr-Aug  
 MAB: Mar-Jun, Sep, Nov

Pigmentation and form:

*Brosme brosme*, observed sizes

Feb 4, 1994

Summary: 1.28-1.31 (1.15-1.46), og .26-.28 (.24-.30)

Area	Mon	Egg diameter					Oil globule diameter					Cruise	Sta
		Obs*	Mean	SD	Min	Max	Obs	Mean	SD	Min	Max		
GM	May	10	1.28	.080	1.15	1.39	10	.26	.015	.24	.30	DL7905	140
GM e	Jun	1	.-	.-	1.27	1.27	1	.-	.-	.26	.26	DL8603	189
GM	Jul	11	1.31	.044	1.22	1.37	11	.28	.011	.27	.30	AL7906	122
GB w	Oct	1	.-	.-	1.46	1.46	1	.-	.-	.26	.26	DL8906	191
MA	Apr	1	.-	.-	1.29	1.29	1	.-	.-	.26	.26	AA8704	29

\* Observations are of late-stage eggs unless noted otherwise.

Unknown #232 Taxon Code: 100 00 232

Sep 30, 1992

Shape and size: Spherical; (1.42)

Oil g: Single; (.30)

Egg membrane: Single, smooth, clear and with a copper tint.

Yolk: Partially segmented?

Pv space: Narrow (normal)

Myomeres: Rough count 35 (20+15)

Spawning: MAB: Jun (south)

Pigmentation and form:

**Late**

**1 1/8~:** Anus at approx 60% BL. Finfold broad; both dorsal and anal ffolds greater in depth than body depth. Melan present on embryo, yolk and oil g, but not in ffolds. On head, melan in 2 dors-lat rows from snout back to include h-brain, with a few scatt between and lat. From h-brain to anus melan scatt over entire body (dors, lat and ventral), as well as on h-gut. Post to anus most melan restricted to double rows both dorsally and ventrally which extend to about 95% BL. None in ffolds. On yolk faint dend melan scatt on dors 2/3 (large patches near head and abdomen), but not on ventral 1/3. Oil g with several scatt melan.

Unknown #232, observed sizes

Jul 19, 1989

Summary: (1.42), og (.30)

Area	Mon	Obs*	Egg diameter				Oil globule diameter				Cruise	Sta	
			Mean	SD	Min	Max	Obs	Mean	SD	Min			Max
MA so	Jun	1	.-	.-	1.42	1.42	1	.-	.-	.30	.30	DL8604	145

\* Observations are of late-stage eggs unless noted otherwise.

[tentative identification: *Astroscopus guttatus*]

Shape and size: Spherical, 1.47-1.59 (1.40-1.69)

Oil g: Single; .27-.33 (.22-.35)

Egg membrane: Finely sculpted, single, clear and colorless

Yolk: Homogeneous

Pv space: Narrow (normal)

Myomeres:

Spawning: MAB: Apr-Oct  
SAB: Apr and Aug

Pigmentation and form:

### **MIDDLE**

**mid-Mid, 3/8-4/10~:** A thick-bodied embryo; oil g post to tailtip. Numerous dark, punct melan widespread on embryo with a few on oil g and on yolk near oil g. Melan on dorsum from snout to tailtip, most numerous and widespread from head and post to about 2/3 BL -- rather like *S. aquosus* pigmentation at this stage. On head 1 or 2 melan on snout, with most occurring from between eyes and posteriad. Melan spreading lat at mid-body and on posterior area, and on yolk surface near tailtip and oil g.

### **LATE**

**45%~, twisting:** Stubby embryo (late stage at <1/2~); oil g post. Melan dark and compact (punct to stellate), rarely dendritic. Melan found on embryo and oil g; none on yolk or in finfold. On embryo, present from snout to about 95% BL; a few scatt on snout and between eyes; tend to surround mid-brain lobes; then lat to ant 1/2 h-brain and lat and dors over post 1/2 h-brain and converging to a bold mid-dors series by end of h-brain and extending post to 90% BL, where ends abruptly. Also, melan occur lat and dors-lat on middle 1/3 of body, and vent-lat on body post to h-brain, extending to 90% BL. Several melan on and streaming towards (on h-gut?) oil g.

**5/8~, twisted and flexed:** Thick-bodied embryo; post oil g; finfold approx 1/2-2/3 BD (just post to anus). General appearance of bold, dark, blotchy to dend melan from snout back to, and stopping abruptly at, 9/10 BL. Melan widespread over head, but not over eyes, tend to surround h-brain, then posteriad as dark and blotchy, dors and vent-lat series, with a few lat at mid-body and a couple along h-gut. A few dark melan present on oil g; none in finfold; and only rarely on yolk (near oil g and beneath head).

**3/4-7/8~:** Stout embryo; very large head; post oil g; well developed finfold (>BD, post anus); anus at about mid-body. Melan on embryo as before -- large, dark and blotchy to dendritic, occurring from snout and posteriad to an abrupt end at 7/8 BL. Melan on body are generally lat on ant 1/2 of body, and dors and vent on post 1/2. Melan present on h-gut, on oil g and may be a couple on yolk near oil g, otherwise yolk is immaculate.

Summary: 1.47-1.59 (1.40-1.69), og .27-.33 (.22-.35)

Area	Mon	Egg diameter					Oil globule diameter					Cruise	Sta
		Obs*	Mean	SD	Min	Max	Obs	Mean	SD	Min	Max		
MA	May	1	.-	.-	1.57	1.57	1	.-	.-	.27	.27	DL8003	3
MA	Jun	5	1.59	.070	1.48	1.66	0	.-	.-	.-	.-	DL8604	152
MA	Jul	1	.-	.-	1.50	1.50	1	.-	.-	.24	.24	EV8006	2
MA s	Jul	10	1.58	.060	1.50	1.69	8	.33	.017	.30	.35	AL8407	100
MA s	Aug	2	1.50	.014	1.49	1.51	2	.26	.000	.26	.26	DL8507	21
MA s	Aug	1m,1	1.47	.027	1.46	1.49	1	.-	.-	.27	.27	DL8708	2
MA s	Aug	6m,5	1.57	.054	1.46	1.66	8	.27	.022	.23	.30	DL8708	10
MA s	Sep	1	.-	.-	1.40	1.40	1	.-	.-	.28	.28	AL8605	32
MA	Sep	1	.-	.-	1.48	1.48	1	.-	.-	.22	.22	AL8605	63
MA	Sep	1	.-	.-	1.51	1.51	1	.-	.-	.22	.22	AL8605	78
MA	Oct	8	1.51	.046	1.44	1.56	7	.27	.014	.24	.28	AL7911	23

\* Observations are of late-stage eggs unless noted otherwise.

Unknown #205 Taxon Code: 100 000 205

Sep 23, 1992

Shape and size: Spherical; 1.48 (1.45-1.53)

Oil g: Single; (.10-.12)

Egg membrane: Sculpted, hexagonal pattern (very low relief sculpting)  
irregular hexagons approx .05mm across; surface appears orange-peel like at first glance.

Yolk: Homogeneous

Pv space:

Myomeres:

Spawning: MAB: Feb (offshore)

Pigmentation and form:

[No information on this, yet.]

Unknown #205, observed sizes

Jul 19, 1989

Summary: 1.48 (1.45-1.53), og (.10-.12)

Area	Mon	Obs*	Egg diameter				Oil globule diameter				Cruise	Sta	
			Mean	SD	Min	Max	Obs	Mean	SD	Min			Max
MA off	Feb	4e	1.48	.035	1.45	1.53	-	.-	.-	.10	.12	AL8502	13

\* Observations are of late-stage eggs unless noted otherwise.

*Maurolicus muelleri* Taxon Code: 121 140 801

Oct 15, 1992

Shape and size: Spherical, prominently sculpted (hexagons)  
 Diam., outer, pt-to-pt; 1.54-1.59 (1.37-1.75)  
 Diam, inner, smooth; .88-.89 (.84-.92)

Oil g: Single; yellow; post to post-vent; diam .23-.24 (.21-.25)

Egg membrane: Outer; sculpted hexagons; mesh size .25-.27 (.18-.34) Inner; smooth, clear and colorless

Yolk: Segmented

Myomeres:

Pv space: Narrow (normal)

Spawning: Deep water (shelf edge);  
 GOM: Sep-Dec and Feb  
 GB: Aug-Jan, Mar-Jun  
 SNE: Mar-Jan  
 MAB: Jan-Dec  
 SAB: Mar, Apr

Pigmentation and form:

**MIDDLE:** No pigmentation. A slender embryo with a narrow head.

**LATE:**

**Ea-Late:** No pigmentation. A slender embryo with a narrow head.

**3/4~:** " " " " " " " " "

**7/8~:** " " " " " " " " "

*Maurolicus muelleri*, observed sizes

Oct 5, 1989

Summary: outer diam (point to point): 1.54-1.59 (1.37-1.75)  
 mesh size (point to point): .25-.27 (.18-.34)  
 inner diam, smooth: .88-.89 (.84-.92)  
 oil globule diam: .23-.24 (.21-.25)

Area	Mon	Obs*	Outer diam				Obs	Mesh size				Obs	Inner diam				Obs	Oil g diam				Cruise	Sta
			Mean	SD	Min	Max		Mean	SD	Min	Max		Mean	SD	Min	Max		Mean	SD	Min	Max		
MA s	Apr	10	1.54	.114	1.37	1.75	-	.25	.054	.18	.34	10	.88	.024	.84	.92	10	.23	.009	.21	.24	DL8503	136
MA s off	Aug	2	1.59	.013	1.58	1.60	11	.27	.021	.24	.31	2	.89	.011	.88	.90	2	.24	.013	.23	.25	DL8708	1

\* Observations are of late-stage eggs unless noted otherwise.

*Lophius americanus* Taxon Code: 195 010 202

Sep 16, 1992

Shape and size:

Oil g:

Egg membrane:

Yolk:

Pv space:

Myomeres:

Spawning: GOM: Jun, Sep  
 GB: May  
 SNE: Mar, Jun, Sep, Oct  
 MAB: May

Pigmentation and form:

*Lophius americanus*, observed sizes

Jul 17, 1989

Summary: outer diam, deciduous, irreg: (1.60-1.90)  
 inner diam, irreg: (1.43-1.70)  
 oil globule diam: (.42-.50)

Area	Mon	Obs*	Outer diam				Obs	Inner diam				Obs	Oil globule diam				Cruise	sta
			Mean	SD	Min	Max		Mean	SD	Min	Max		Mean	SD	Min	Max		
SN w off	Mar	0	.-	.-	.-	.-	1	.-	.-	1.60	1.70	1	.-	.-	.45	.50	AL8502	135
SN w	May	1m	.-	.-	1.60	1.90	1	.-	.-	1.55	1.60	1	.-	.-	.42	.42	DL8704	158
SN w	May	1m	.-	.-	1.64	1.64	1	.-	.-	1.43	1.54	1	.-	.-	.45	.45	DL8704	162

\* Observations are of late-stage eggs unless noted otherwise.



Unknown #239 Taxon Code: 100 000 239

Jan 28, 1994

Shape and size: Slightly non-spherical

Diam approx. 1.80

Oil g: Single; diam 0.36, amber

Egg membrane: Quite opaque, orange-yellow, hard and thick

Yolk: Indistinctly segmented, 80% of yolk amber, 20% clear

Pv space: Narrow, (normal)

Myomeres:

Spawning: GB: Mar (deep water, southern shelf edge)

Pigmentation and form:

**LATE**

3/4~, No pigmentation visible on embryo or yolk, even after excising embryo. Vent at 50% body length. Head bulbous and large in comparison to rest of embryo. Eyes appear well developed.

Unknown #239, observed sizes

Jan 28, 1994

Summary: diam (1.80), o.g. (0.36)

Area	Mon	Obs*	Egg diameter				Oil globule diameter				Cruise	Sta	
			Mean	SD	Min	Max	Obs	Mean	SD	Min			Max
GB	Mar	1	1.80	.-	1.80	1.80	1	0.36	.-	.36	.36	DL9105	219

\* Observations are of late-stage eggs unless noted otherwise.

Shape and size: Almost spherical, slightly oval, (often collapsed)  
1.01-1.03 (.99-1.10) x .97-.98 (.93-1.03)

Oil g: None  
Egg membrane: Smooth, clear and colorless  
Yolk: Homogeneous (a few eggs are slightly segmented)  
Pv space: Narrow (normal)  
Myomeres: "Numerous"  
Spawning: GB: Jun, Aug, Oct  
SNE: May-Jul, Sep, Oct  
MAB: Mar-Oct  
SAB: Aug

Pigmentation:

**MIDDLE**

**mid-Middle:** No pigmentation.

**la-Middle:** Several minute melan scattered on dors aspect of embryo, from h-brain post to about 2/3 BL.

**LATE**

**5/8~:** Tiny melan scatt on dors and dors-lat aspects of embryo, a couple on yolk next to embryo at mid-body.

**7/8~:** Numerous melan scatt on dors of head and h-brain, then scatt post dors and dors-lat; some vent postanally (but fewer than dorsally); may extend into anal ffold postanally. Yolk surface void except for a couple tight alongside abdomen.

Summary: greater diam 1.01-1.03 (.99-1.10), lesser .97-.98 (.93-1.03)

Area	Mon	Obs*	Greater diameter				Lesser diameter				Cruise	Sta
			Mean	SD	Min	Max	Mean	SD	Min	Max		
SNE	Sep	3	1.01	.019	.99	1.03	.97	.011	.95	.97	DL8607	64
MA s	Apr	1	.-	.-	1.04	1.04	.-	.-	1.02	1.02	DL8503	130
MA	Aug	3	1.02	.025	1.00	1.05	.98	.040	.93	1.01	DL7709	70
MA	Aug	1	.-	.-	1.03	1.03	.-	.-	.95	.95	DL8607	34
MA	Aug	12e	1.03	.040	.99	1.10	.98	.033	.93	1.03	DL8607	38
MA	Sep	10m	1.02	.024	.99	1.07	.97	.025	.93	1.01	DL8607	51
MA	Oct	1	.-	.-	1.07	1.07	.-	.-	1.03	1.03	AL7911	33

\*Observations are of late-stage eggs unless noted otherwise.