NO OIL (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.

Taxon code 100000011, no oil, <.80
" " 100000012, " ", .81-.99
" " 100000013, " ", 1.00-1.10

Use the above codes for early eggs, otherwise called unidentified, which have single egg-membranes, are smooth, spherical and have homogeneous yolks.

Unk #170: Dbl memb, .71 (.69-.74) and .68 (.65-.72); segmented yolk; no pigment (5/8~); slender embryo.

Unk #134: (.69-.75); segmented yolk; no pigment (7/8~).

Unk #233: .76-.77 (.73-.83); yolk homog and opaque (perhaps finely segmented); scatt dors and dors-lat melan, couple ventral; melan scatt on yolk vent or ant.

Unk #217: .76-.80 (.74-.81); segmented yolk; no pigment (at full~).

Pleuronectes americanus .80-.82 (.73-.95) x .75-.81 (.69-.84); thick chorion.

Unk #235: (.86); myomeres approx 40; at ea-late few (14), tiny, punct and faint melan on dors and dors-lat aspects of abdomen.

Limanda ferruginea .82-.92 (.76-.96)

Unk #207: (.88-.90); a few faint melan on post 1/2 body (at 5/8~).

Tautogolabrus adspersus .84-.96 (.78-1.00)

Anchoa mitchilli.88-.92 (.77-.99) x .73-.80 (.70-.85); segmented yolk.

Unk #63: .91-.95 (.88-.99) x .85-.92 (.81-.95); most are non-spherical, some collapsed; virtually no pigment.

Unk #126: Dbl memb, .96 (.89-.99) and .88 (.82-.92); segmented yolk; no pigm (1/2-5/8~).

Unk #127: .90-.97 (.89-1.00) x .90-.93 (.84-.97); most are non-spherical; pigmented; numerous minute melan; [more pigm than Unk #63].

Unk #91: 1.01-1.03 (.99-1.10) x .97-.98 (.93-1.03); most are non-spherical, often collapsed; numerous tiny melan on embryo.

Tautoga onitis .96-1.10 (.95-1.14)

Pollachius virens .99-1.14 (.94-1.17)

Engraulis eurystole 1.02-1.25 x 0.50-0.80; segmented yolk; no pigment.

Unk #211: sculpted (coarsely); outer diam (pt-to-pt) 1.03-1.04 (.96-1.08), inner (smooth) .99-1.00 (.94-1.03); pigm like a lightly pigm *T. onitis*.

Unk #222: sculpted (finely ?); outer diam (pt-to-pt) 1.24 (1.22-1.25), inner (smooth) 1.18 (1.16-1.20); dend melan scatt lat and ventrally; spot on vent.

Unk #212: sculpted (finely); outer diam (pt-to-pt) 1.30-1.32 (1.18-1.39), inner (smooth) 1.27-1.30 (1.21-1.37); two dors-lat rows of melan.

Clupea harengus 1.25-1.29 (1.20-1.35); thick chorion, usually irregular shape.

Glyptocephalus cynoglossus 1.27-1.34 (1.10-1.44)

Melanogrammus aeglefinus 1.28-1.50 (1.22-1.61)

Gadus morhua 1.30-1.49 (1.20-1.64)

Unk #214: (1.41); at 7/8~ broad head, heavy-bodied embryo, fan-like pectorals; punct melan lightly scatt on head, body and fins.

Anchoa hepsetus 1.50-1.63 (1.34-1.76) x .78-.87 (.73-.92); segmented yolk.

Unk #125: Dbl memb, 1.64-1.72 (1.51-1.79) & 1.60-1.68 (1.48-1.73); no melanophores at (1 1/4~); segmented yolk; anus at 7/8 BL.

Unk #175: Dbl memb, 1.84 (1.80-1.91) and 1.72 (1.71-1.77); h-gut long and bifurcated; faint punct melan (at 1 1/2~) on ventrum of body, on h-gut and in eyes.

Unk #238: (1.98); no oil; wide perivitelline space; segmented yolk; slender embryo; no melan (full~); myomeres approx 55+30to40; gut ends at approx 7/8 to 9/10 BL.

Unk #113: (2.14-2.30); segmented yolk.

Hippoglossoides platessoides 2.06-2.38 (1.80-2.67); wide perivitelline space.

Zu cristata (2.30)

Unk #229: sculpted (very finely); (2.40-2.57); sticky egg, it floats; numerous myomeres; melan on ant 1/2 to 2/3 of embryo and in large patches on yolk.

Unk #195: (3.10-3.11); advanced development at 5/8~; numerous punct melan on ant 2/3 body.

Unknown #170 Taxon Code: 100 000 170 Jan 15, 1993

Shape and size:	Spherical; Double membrane outer .71 (.69-.74), inner .68 (.65-.72)
Oil g:	None
Egg membrane:	Double; smooth, clear and colorless (and tough).
Yolk:	Segmented
Pv space:	
Myomeres:	approx 30 (5)
Spawning:	GB: Dec, Jan SNE: May, Aug-Nov MAB: Jan, May, Jul-Sep SAB: Mar

Pigmentation:

LATE
ea-Late, 5/8~: No pigmentation; slender embryo, head not much wider than body.

Unknown #170, observed sizes

Summary: double membrane, outer .71 (.69-.74), inner .68 (.65-.72)

		Greater diameter					Lesser diameter					
Area	Mon	Obs*	**Mean**	SD	Min	Max	**Mean**	SD	Min	Max	Cruise	Sta
MA s off	Jan	1e	.-	.-	.72	.72	.-	.-	.70	.70	DL8601	6
MA off	Jul	1e	.-	.-	.72	.72	.-	.-	.69	.69	AL7906	30
SAB off	Mar	3e,1	.71	.021	.69	.74	.68	.028	.65	.72	AL8502	26

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

Unknown #134 Taxon Code: 100 000 134 Jan 15, 1993

Shape and size: Spherical; (.69-.75)

Oil g: None
Egg membrane:
Yolk: Segmented
Pv space:
Myomeres:
Spawning: GB: Oct
SNE: Sep, Nov
MAB: Mar-May, Sep-Dec

Pigmentation:

LATE
7/8~: No pigmentation

Unknown #134, observed sizes

Summary: (.69-.75)

		Egg diameter						
Area	Mon	Obs*	**Mean**	SD	Min	Max	Cruise	Sta
GB s	Oct	1	.-	.-	.69	.69	AL7911	125
MA s	Sep	49	.-	.-	.72	.72	AL8010	2
MA s	Sep	5m,11	.-	.-	.75	.75	DL8106	23

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

Unknown #233 Taxon Code: 100 000 233 Mar 31, 1993

Shape and size:	Spherical; .76-.77 (.73-.83)
Oil g:	None
Egg membrane:	Single, smooth, clear and colorless
Yolk:	Homogeneous (or finely segmented?)
Pv space:	Narrow (normal)
Myomeres:	approx 25-30 (normal)
Spawning:	MAB: Aug, Sep

Pigmentation and form:

LATE

3/4-7/8~: Yolk is quite opaque, perhaps finely segmented. Melan dend to stell scatt from snout to about 95% BL; occur on dors of head, lat to h-brain, then post as a few widely scatt melan, mostly dors and dors-lat, with a couple ventral post to anus. Some with a slightly darker and more prominent melan at tailtip (dorsum). Anus at approx mid-body. On yolk, several widely scatt dend melan; mostly on ventral 2/3 of yolk, or on anterior 1/2.

Unknown #233, observed sizes Mar 31, 1993

Summary: .76-.77 (.73-.83)

		Egg diameter						
Area	Mon	Obs*	**Mean**	SD	Min	Max	Cruise	Sta
MA	Sep	5	.77	.024	.75	.80	AL8605	73
MA	Sep	1	.-	.-	.83	.83	AL8605	63
MA	Sep	4	.76	.024	.73	.78	AL8605	78

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

Unknown #217 Taxon Code: 100 000 217 Mar 31, 1993

Shape and size:	Spherical (most; some slightly irreg), .76-.80 (.74-.81)
Oil g:	None
Egg membrane:	Smooth, clear and colorless
Yolk:	Strongly segmented
Pv space:	Normal (narrow)
Myomeres:	Numerous, approx 35+ + 20+
Spawning:	MAB: May, Aug, Sep., south, inshore

Pigmentation:

LATE
full~: No pigmentation.

Unknown #217, observed sizes

Summary: 0.76-0.80 (.74-.81)

		Egg diameter						
Area	Mon	Obs*	**Mean**	SD	Min	Max	Cruise	Sta
MA s	May	3	.80	.015	.78	.81	AL8504	129
MA	Sep	6	.76	.022	.74	.79	AL8707	57

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

Pseudopleuronectes americanus Taxon Code: 183 020 101 Dec 10, 1992

Shape and size: Non-spherical,
greater diam .80-.82 (.73-.95)
lesser diam .75-.81 (.69-.84)

Oil g: None
Egg membrane: Thick, slightly opaque, rough
Yolk:
Pv space:
Myomeres:
Spawning: GOM: Apr-Jun
GB: Mar-Jun
SNE: Feb-May
MAB: Apr

Pigmentation and form:

Pseudopleuronectes americanus, observed sizes Jan 30, 1990

Summary: greater diam .80-.82 (.73-.95), lesser .75-.81 (.69-.84)

		Greater diameter					Lesser diameter					
Area	Mon	Obs*	**Mean**	SD	Min	Max	**Mean**	SD	Min	Max	Cruise	Sta
GB	Apr	1	.-	.-	.91	.91	.-	.-	.81	.81	DL8503	28
GB	Apr	1e,1	.82	.021	.81	.84	.81	.042	.78	.84	DL8503	30
GB	Apr	1e	.-	.-	.84	.84	.-	.-	.80	.80	DL8503	39
GB s	Apr	3m,3	.80	.030	.76	.85	.77	.039	.72	.82	AL8701	258
SN	Apr	9e,1	.80	.035	.73	.84	.75	.029	.69	.78	DL8503	45
SN	Apr	9	.81	.060	.75	.95	.75	.030	.69	.77	AL8701	201

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

Unknown #235 Taxon Code: 100 000 235 Mar 31, 1993

Shape and size: Spherical; (.86)

Oil g: None
Egg membrane: Single, smooth, clear and colorless.
Yolk: Homogeneous
Pv space: Narrow (normal)
Myomeres: approx 40 or so (estimated)
Spawning: MAB: Aug, Nov, south

Pigmentation and form:

LATE

ea-Late, 5/8~: Tail not yet twisted or flexed; myomeres tough to count but numerous (maybe 40 or so). Melan punct and very tiny, approx 14 melan in all, scatt over dors and dors-lat aspects of abdomenal area.

[Not Unk #63 because of pigment; not Unk #207 because of location of melan (abdomenal in Unk #235 rather than on post 1/2 body as in Unk #207)].

Unknown #235, observed sizes Mar 31, 1993

Summary: (.86)

		Egg diameter						
Area	Mon	Obs*	**Mean**	SD	Min	Max	Cruise	Sta
MA s	Nov	1	.-	.-	.86	.86	DL8510	3

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

Limanda ferruginea Taxon Code: 183 020 301 Dec 9, 1992

Be wary of confusion with Unk #127, especially in the area off NJ to MD during (May) Jun and Jul, and with *T. adspersus*.

Shape and size:	Spherical Diam: .82-.92 (.76-.96)
Oil g:	None
Egg membrane:	Smooth, clear and colorless
Yolk:	Homogeneous
Pv space:	Narrow (normal)
Myomeres:	
Spawning:	GOM: Mar-Sep GB: Mar-Sep SNE: Feb-Aug MAB: Mar-Jun

Pigmentation and form:

EARLY

Epiboly 9/10 to almost complete: A few small melan occur in a dorsal abdomenal patch, but only in some specimens.

MIDDLE

ea-Middle: Melan small, slightly stell and faint; scatt dors from post of eyes to approx 3/4 BL; most abundant over h-brain and abdomenal; melan not lined up. Some specimens still immaculate at this stage.

mid-Middle: Same, but melan darker and now from between eyes and post (sparsely) almost to ttip.

late-Middle: Small, punct to stell melan scatt dors and dors-lat, snout to ttip; in some specimens there tends to be a mid-dors row on post 1/2 body, not 2 rows [in contrast to *T.adspersus* and Unk #127]. Viewed dorsally this appears as scatt melan with a mid-dors series, or almost as 3 rows (1 mid-dors and 2 dors-lat rows).

LATE

ea-Late, 5/8~, not yet twisting or flexing,: no ffold yet

Many small, not quite punct, often faint [compared to *T.adspersus*] melan on embryo, snout to ttip. Sparse on head, but present on snout, over eyes, then post as scatt over h-brain (not outline it) and back dorsally virtually to ttip. A few melan lat, vent-lat and vent on post 1/4 body (where tail lifts from yolk surface). Dors melan tend to line up in mid-dors row rather than scatt or in 2 rows; this occurs in most, but not all, specimens.

5/8 to 3/4~, twisting and flexing: finfold forming; anus at about 3/4 BL.

Small melan, punct to slightly stell, sparsely scatt over head, often over eyes, and scatt over h-brain (not outlining it); tend to converge posteriad to mid-dors row at base of ffold and a few scatt lat (post to h-brain); a few vent on post 1/4 to 1/3 of body. A couple of melan may be above and below h-gut, but not in all specimens. Sides of embryo are relatively immaculate compared to dors and vent surfaces, but there are a few isolated scatt melan on sides. None in ffold or on yolk.

3/4 to 7/8~: Pigmentation similar to above; melan now appear more spread out, due to increasing length of embryo. Melan (2 or 3) more consistently above and below h-gut.

7/8 to full~: Anus at about 50% BL; approx 35 postanus myomeres.
Melan punct to slightly stell, scatt dors and dors-lat over head and h-brain, then post as mid-dors and mid-vent series with very few lat; a few dors and vent on h-gut; none in ffold or on yolk. Viewed laterally to post 1/3 of body the dors and vent series of melan form a distinct dashed outline of the embryo tail (not finfold).

Limanda ferruginea, observed sizes Oct 4, 1994

Summary: .82-.92 (.76-.96)

		Egg diameter						
Area	Mon	Obs*	**Mean**	SD	Min	Max	Cruise	Sta
GB	Mar	10	.87	.020	.84	.91	DL9105	193
GB	Mar	10	.89	.034	.85	.95	AL9203	203
GB	Apr	10	.87	.035	.82	.95	AL8003	6
GB	Apr	8	.91	.032	.84	.89	DL8503	14
GB	Apr	11	.92	.033	.85	.96	DL8503	29
GB e	Apr	15	.88	.039	.78	.94	AL8701	258
GB e	Apr	11	.86	.037	.80	.91	AL8701	260
GB e	Apr	10	.85	.031	.80	.91	DL9004	269
GB	Apr	10	.86	.022	.82	.88	AL9304	235
GB	Apr	10	.87	.022	.82	.88	AL9304	250
SN	Mar	3	.88	.019	.86	.90	AL8701	86
SN	Mar	10	.83	.018	.80	.85	DL9004	132
SN	Mar	10	.86	.026	.82	.89	DL9105	138
SN	Mar	10	.86	.022	.82	.88	AL9203	153
SN	Mar	10	.88	.013	.85	.88	AL9203	156
SN	Apr	6	.90	.024	.86	.93	AL8701	89
SN in	Apr	10	.88	.021	.85	.91	AL8701	117
SN	Apr	9	.87	.021	.84	.91	AL8701	130
SN	May	11	.88	.025	.83	.91	DL7905	66
SN	May	3e,1m,5	.88	.035	.83	.92	DL7905	67
SN	May	10	.86	.025	.82	.89	DL7905	69
SN	Jun	12	.85	.014	.82	.87	DL8003	76
SN	Jun	1	.	.	.84	.84	DL8604	15
MA	Apr	10	.88	.025	.85	.92	AA8704	52
MA	May	4	.82	.041	.76	.86	DL7905	45
MA	May	10	.85	.025	.81	.89	DL8704	57

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

Unknown #207 Taxon Code: 100 000 207 Mar 31, 1993

Shape and size: Spherical; (.88-.90)

Oil g: None
Egg membrane: Smooth, clear and colorless
Yolk: Homogeneous
Pv space:
Myomeres:
Spawning: MAB: Mar, Apr (south, offshore)

Pigmentation:

LATE
5/8~: A few faint dendritic melan on post 1/2 body, on dors, dors-lat and vent aspects. None on yolk.

Unknown #207, observed sizes

Summary: (.88-.90)

		Egg diameter						
Area	Mon	Obs*	**Mean**	SD	Min	Max	Cruise	Sta
MA s	Apr	1	.-	.-	.88	.88	DL8503	126
SA	Mar	1	.-	.-	.90	.90	AL8602	56

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

Tautogolabrus adspersus Taxon Code: 170 280 101 Dec 21, 1992

Shape and size: Spherical; .84-.96 (.78-1.00)

Oil g: None
Egg membrane: Single, smooth, clear and colorless
Yolk: Homogeneous
Pv space: Narrow (normal)
Myomeres:
Spawning: GOM: May-Sep
GB: May-Oct
SNE: May-Sep
MAB: May-Sep, Nov

Pigmentation and form:

Tautogolabrus adspersus, observed sizes Dec 21, 1992

Summary: .84-.96 (.78-1.00)

		Egg diameter						
Area	Mon	Obs*	**Mean**	SD	Min	Max	Cruise	Sta
GOM	Jul	17	.89	.026	.84	.92	WI8701	269
GOM	Jul	13	.90	.017	.88	.93	WI8701	270
GB	Jul	7	.94	.029	.90	.99	DL8604	293
GB	Jul	3	.95	.011	.93	.95	DL8604	307
GB	Jul	4	.95	.027	.93	.98	DL8604	309
GB	Jul	10	.96	.014	.94	.98	DL8604	310
GB	Jul	9	.92	.022	.89	.96	DL8604	312
GB	Jul	8	.96	.028	.91	1.00	DL8604	318
GB	Aug	4	.91	.013	.90	.93	AL8407	416
GB	Aug	8	.95	.025	.91	.99	AL8705	488
GB	Aug	4	.96	.024	.93	.99	AL8705	512
GB	Aug	2m,12	.94	.023	.90	.97	AL8705	520
GB	Aug	8	.93	.022	.90	.96	AL8705	562
SN in	May	24	.90	.023	.86	.93	AL8504	86
SN	May	7	.90	.029	.88	.95	DL8704	175
SN	Jun	25	.89	.033	.82	.92	DL8003	76
SN	Jun	10	.87	.020	.85	.90	DL8604	20
SN	Jul	20	.87	.024	.84	.91	AL7906	57
SN in	Jul	8	.85	.032	.82	.91	AL8406	3
SN in	Jul	21	.84	.025	.78	.88	AL8407	17
SN	Jul	10	.86	.018	.83	.89	DL8604	169
MA n	Jun	10	.86	.029	.81	.90	DL8604	26

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

Anchoa mitchilli Taxon Code: 121 060 103 Dec 9, 1992

Shape and size: Non-spherical;
Greater diam .88-.95 (.77-1.07)
Lesser diam .73-.80 (.70-.85)

Oil g: None
Egg membrane: Smooth, clear and colorless
Yolk: Segmented
Pv space: Narrow (normal)
Myomeres:
Spawning: SNE: May-Aug, Oct
MAB: Apr-Sep
SAB: Apr

Pigmentation and form:

No pigmentation at any stage.

Anchoa mitchilli, observed sizes Oct 5, 1990

Summary: greater diam .88-.95 (.77-1.07) lesser .73-.80 (.70-.85)

		Greater diameter					Lesser diameter					
Area	Mon	Obs*	**Mean**	SD	Min	Max	**Mean**	SD	Min	Max	Cruise	Sta
MA	May	10	.90	.038	.83	.95	.80	.021	.77	.82	DL8003	9
MA	May	10	.90	.066	.80	.99	.78	.041	.72	.85	DL8003	17
MA	Jun	10	.95	.076	.87	1.07	.80	.023	.77	.83	WI8701	5
MA n	Jun	10	.92	.060	.77	.98	.80	.028	.76	.85	DL8604	26
MA n	Jun	10e	.88	.050	.79	.94	.73	.025	.70	.77	DL8604	65

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

Unknown #63 Taxon Code: 100 000 063 Dec 21, 1992
[tentative identification: *Lepophidium profundorum*]

Shape and size: Almost spherical, to noticeably oval
(often partially collapsed)
.91-.95 (.88-.99) x .85-.92 (.81-.95)

Oil g: None
Egg membrane: Smooth, clear and colorless
Yolk: Homogeneous
Pv space: Narrow (normal)
Myomeres: Numerous (approx 50+)
Spawning: GOM: Aug
GB: May-Oct
SNE: May-Oct
MAB: May-Oct

Pigmentation and form: In general, virtually no melanophores present.

MIDDLE
la-Mid: No pigmentation

LATE
5/8 to full~: No pigmentation

1 1/8~: There may be (rarely) a couple of tiny melan on the post 1/2 of the embryo.

Unknown #63, observed sizes Aug 26, 1992

Summary: greater diam, .91-.95 (.88-.99)
lesser diam, .85-.92 (.81-.95)

			Greater diameter				Lesser diameter					
Area	Mon	Obs*	**Mean**	SD	Min	Max	**Mean**	SD	Min	Max	Cruise	Sta
GB	Aug	11	.95	.017	.91	.97	.92	.018	.90	.95	AL8507	305
GB	Sep	2	.91	.000	.91	.91	.85	.014	.84	.86	DL8607	110
GB	Sep	7	.94	.016	.93	.97	.91	.023	.88	.94	DL8607	126
GB s	Sep	7	.91	.017	.89	.92	.86	.023	.81	.89	DL8607	127
SNE	Oct	1m,2	.95	.048	.90	.99	.89	.058	.84	.95	DL8608	171
MA	Jul	11	.93	.018	.91	.96	.89	.014	.88	.91	AL8507	55
MA	Jul	9	.92	.024	.88	.95	.88	.010	.86	.90	AL8507	154
MA	Aug	1	.-	.-	.92	.92	.-	.-	.85	.85	DL8607	30

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

Unknown #126 Taxon Code: 100 000 126 Jan 15, 1993

Shape and size:	Double membrane; outer diam .96 (.89-.99), inner .88 (.82-.92)
Oil g:	None
Egg membrane:	Double
Yolk:	Segmented
Pv space:	
Myomeres:	in 20's (normal)
Spawning:	GB; Oct SNE: Apr, Sep and Nov MAB: Jan, Mar, Jul-Sep, Nov SAB: Apr

Pigmentation:

MIDDLE
mid- to la-Mid: No pigmentation

LATE
1/2 to 5/8~: No pigmentation

Unknown #126, observed sizes

Summary: double membrane, outer diam .96 (.89-.99)
inner " .88 (.82-.92)

			Greater diameter				Lesser diameter					
Area	Mon	Obs*	**Mean**	SD	Min	Max	**Mean**	SD	Min	Max	Cruise	Sta
SN	Sep	1e	.-	.-	.97	.97	.-	.-	.84	.84	BE7903	26
SN off	Nov	1e	.-	.-	.89	.89	.-	.-	.82	.82	DL8510	63
MA	Jul	1	.-	.-	.96	.96	.-	.-	.84	.84	EV8006	45
MA	Aug	1e	.-	.-	.99	.99	.-	.-	.92	.92	BE7901	17
MA	Aug	1e	.-	.-	.92	.92	.-	.-	.88	.88	BE7901	34
MA	Jan	1e	.-	.-	.96	.96	.-	.-	.85	.85	DL8601	35
SA	Apr	2m	.96	.007	.96	.97	.88	.028	.86	.90	DL8503	137

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

Unknown #127 Taxon Code: 100 000 127 Aug 17, 1992

Similar in size to Unk #63, *L. ferruginea* and *T. adspersus*; smaller than Unk #91; more pigment than Unk #63. Be wary of confusion with *L. ferruginea*, especially in area off NJ to MD during Jun and Jul.

Shape and size:	Spherical to slightly oval (often collapsed) greater diam .90-.97 (.89-1.00) lesser diam .90-.93 (.84-.97)
Oil g:	None
Egg membrane:	Smooth, clear and colorless
Yolk:	Homogeneous
Pv space:	Narrow
Myomeres:	Numerous (approx 40? post anus)
Spawning:	MAB: May-Sep; generally mid- and inner-shelf waters

Pigmentation:

LATE

ea-Late, 5/8~, not twisted to just twisting and finfold forming:

Tiny, punct, faint melan scatt dors and dors-lat from behind eyes or h-brain to about 95% BL; or, in 2 dors-lat rows in neural grooves over approx central ½ of body. Or, a combination of both configurations. Use a white background to see melan, they are tiny and faint. [In comparison, both *L. ferruginea* and *T. adspersus* have darker and more obvious pigment.]

3/4~: Anus at approx 2/3 BL. Melan very small, punct to slightly stell, faint and sparse, and occur from between eyes on head to ttip. Widely scatt on head and over h-brain; then post to ttip as sparse and faint double dors row (either side of ffold base). On post 1/10 body the dors rows break down and a few melan appear to be migrating lat and vent; a couple are into anal ffold.

7/8~: Tiny, punct melan (to slightly stell) sparsely scatt on head then post scatt over h-brain and abdomen, then post to ttip as loose (sparse and slightly sloppy) double series either side of ffold base; a few on post 1/10 body lat-vent and vent; often, a couple into vent ffold between anus and ttip. [Generally less melan than *L. ferruginea* and more scatt; not in single dors series as in *L. ferruginea*]

Full~ Anus at approx 1/2 BL; approx 40 myomeres post anus. Tiny, punct melan [smaller than on *L. ferruginea*]; melan dors but sparse on head, including over eyes; scatt dors and dors-lat over h-brain and abdomen then post as widely scatt dors-lat series [not mid-dors row as on L.f.]. Aside from a couple of isolated melan, vent melan form a row of <10 only on post 1/10 body [*L. ferruginea* has more vent melan and a longer series]. There are <5 melan in anal ffold midway from h-gut to ttip. None on yolk.

Unknown #127, observed sizes Jan 15, 1993

Summary: greater diam .90-.97 (.89-1.00), lesser .90-.93 (.84-.97)

		Greater diameter					Lesser diameter					
Area	Mon	Obs*	**Mean**	SD	Min	Max	**Mean**	SD	Min	Max	Cruise	Sta
MA	Jul	4	.-	.-	.95	.99	.-	.-	.92	.95	EV8006	14
MA	Jul	11	.95	.023	.92	.99	.92	.025	.89	.96	EV8006	15
MA	Jul	1	.-	.-	.95	.95	.-	.-	.92	.92	EV8006	39
MA	Jul	14	.97	.020	.93	1.00	.93	.027	.88	.97	AL8507	156
MA	Jul	1	.	.	.89	.89	.	.	.86	.86	AL8705	182
MA	Aug	1	.	.	.97	.97	.	.	.93	.93	AL8604	167
MA	Aug	2	.90	.007	.89	.90	.90	.007	.89	.90	DL8607	22
MA	Aug	1	.-	.-	.92	.92	.-	.-	.85	.85	DL8607	31
MA	Aug	3	.95	.011	.93	.95	.90	.019	.88	.91	DL8708	15
MA	Sep	5	.96	.035	.91	.99	.90	.043	.84	.95	DL8607	49

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

Unknown #91 Taxon Code: 100 000 091 Dec 21, 1992

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.

Unknown #91, observed sizes Aug 24, 1992

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

			Greater diameter				Lesser diameter					
Area	Mon	Obs*	**Mean**	SD	Min	Max	**Mean**	SD	Min	Max	Cruise	Sta
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.

Tautoga onitis Taxon Code: 170 282 601 Dec 10, 1992

Shape and size: Spherical; .96-1.10 (.95-1.14)

Oil g: None
Egg membrane: Single, smooth, clear and colorless
Yolk: Homogeneous
Pv space: Narrow (normal)
Myomeres:
Spawning: GOM: Sep
SNE: May-Sep
MAB: Apr-Aug

Pigmentation and form:

Tautoga onitis, observed sizes May 12, 1992

Summary: .96-1.10 (.95-1.14)

		Egg diameter						
Area	Mon	Obs*	**Mean**	SD	Min	Max	Cruise	Sta
SN	May	13	1.06	.033	1.02	1.14	AL8504	86
SN	Jun	10	1.02	.018	.99	1.05	DL8003	75
MA	Apr	1m,3	1.10	.013	1.09	1.11	DL8503	117
MA	May	5	1.01	.021	.98	1.03	AL8504	108
MA	May	1m,5	.98	.022	.95	1.01	AL8504	128
MA n	May	4	1.08	.028	1.04	1.10	DL8704	161
MA	Jul	3	.98	.010	.97	.99	AL7906	37
SN	Aug	2	.96	.011	.95	.97	DL8708	74

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

Pollachius virens Taxon Code: 148 010 501 Oct 4, 1994

Shape and size:	Spherical, .99-1.14 (.94-1.17)
Oil g:	None
Egg membrane:	Smooth, clear and colorless
Yolk:	Homogeneous
Pv space:	Narrow (normal)
Myomeres:	
Spawning:	GOM: Oct-Dec, Jan-Jun GB: Oct-Dec, Jan-May SNE: Oct-Dec, Jan-Apr MAB: Feb

Pigmentation and form:

Pollachius virens, observed sizes Oct 4, 1994

Summary: .99-1.14 (.94-1.17)

		Egg diameter						
Area	Mon	Obs*	**Mean**	SD	Min	Max	Cruise	Sta
GM	Nov	9	1.14	.023	1.11	1.16	AL8605	362
GM	Jan	10	1.01	.032	.96	1.05	DL8401	5
GM	Jan	10	.99	.030	.96	1.03	DL8401	35
GM w	Jan	10	1.11	.028	1.07	1.14	DL8501	4
GB	Jan	10	1.01	.031	.94	1.05	DL8401	74
SN	Jan	10	1.11	.029	1.08	1.15	DL9001	28
SN	Jan	10	1.13	.031	1.10	1.17	DL9301	42

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

Unknown #211 Taxon Code: 100 000 211 Mar 31, 1993

[Synodontidae, type 1]

Shape and size:	Spherical, sculpted Outer, point-to-point diam 1.03-1.04 (.96-1.08) Inner, smooth diam .99-1.00 (.94-1.03)
Oil g:	None
Egg membrane:	Sculpted, hexagonal pattern [more prominent than in Unk #212]
Yolk:	Homogeneous
Pv space:	Narrow (normal)
Myomeres:	
Spawning:	SNE: Jul MAB: Feb, Mar, May and Jul-Sep SAB: Mar, Apr and Aug

Pigmentation:

Middle and ea-Late: No pigmentation.

LATE
3/4~: A few punct melan scatt on head and in 2 dors-lat rows, to 1/2 BL.

7/8~: Small dark melan from snout to 9/10 BL as 2 dors-lat rows (reminiscent of a lightly pigmented *T. onitis*).

1 1/8~: Dark punct melan widely scatt on head then lat on abdomen, then post to ttip as 2 dors-lat rows; a couple melan vent to ttip. None in ffold; none on yolk.

Unknown #211, observed sizes Mar 31, 1993

Summary: outer membrane diam (pt-to-pt) 1.03-1.04 (.96-1.08)
inner " " (smooth) .99-1.00 (.94-1.03)

			Greater diameter				Lesser diameter					
Area	Mon	Obs*	**Mean**	SD	Min	Max	**Mean**	SD	Min	Max	Cruise	Sta
MA s off	Sep	1	.-	.-	.96	.96	.-	.-	.94	.94	AL8707	19
SA s	Apr	2	1.04	.000	1.04	1.04	1.00	.007	.99	1.00	DL8503	136
SA s	Apr	4m,2	1.04	.032	.99	1.08	.99	.025	.95	1.03	DL8503	133
SA	Apr	4m,3	1.03	.024	.99	1.06	.99	.019	.95	1.01	DL8503	139

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

Unknown #222 Taxon Code: 100 000 222 Mar 31, 1993

Shape and size:	Spherical, sculpted Outer, pt-to-pt diam 1.24 (1.22-1.25) Inner, smooth diam 1.18 (1.16-1.20)
Oil g:	None
Egg membrane:	Sculpted, hexagonal pattern
Yolk:	Homogeneous
Pv space:	Narrow (normal)
Myomeres:	numerous
Spawning:	SAB: Aug, offshore

Pigmentation:

LATE

1 1/4~: Dark melan scatt along outline of fore- and mid-brain, a few scatt melan on eyes. Dendritic melan scatt on lat and vent aspects of body. Prominent spot on vent; a patch of melan on developing caudal rays. None in ffold or on yolk.

[Differ from Unk #212 in that melan on body are dendritic, and not in two neat dors-lat rows as in Unk #212; and Unk #222 has more melan ventral than dorsal on body.]

Unknown #222, observed sizes

Summary: outer membrane (sculpt) diam 1.24 (1.22-1.25)
inner " (smooth) " 1.18 (1.16-1.20)

		Greater diameter					Lesser diameter					
Area	Mon	Obs*	**Mean**	SD	Min	Max	**Mean**	SD	Min	Max	Cruise	Sta
SA off	Aug	2	1.24	.021	1.22	1.25	1.18	.028	1.16	1.20	DL8507	16

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

Clupea harengus Taxon Code: 121 050 601 Dec 9, 1992

Shape and size:	Spherical to slightly irregular (demersal egg) Diam, greater 1.29 (1.22-1.35) " , lesser 1.25 (1.20-1.33)
Oil g:	None
Egg membrane:	Smooth to rough, clear and colorless
Yolk:	Bright yellow and finely segmented, opaque
Pv space:	Wider than normal
Myomeres:	
Spawning:	GOM: Sep, Oct GB: Apr(?), Oct

Pigmentation and form:

LATE
7/8 to full~: Bright yellow yolk. Pigm just beginning in eyes; no other melan. No finfold yet.

1 1/8~: Pigm in eyes is increasing, but not dark yet.

1 1/4 to 1 1/2~: Finfold forming; no gut yet. Pigm in eyes getting darker; no other melan yet.

1 3/4 to 2~: Gut forming; it extends from yolk back to approx 9/10 BL. Eyes well pigm now. Melan on ventrum of body may or may not begin by this stage; this varies, beginning in some at 1 1/2~ and in others not until twice around.

2 1/8 to 2 1/2~: Yolk reduced in volume. Eyes very darkly pigm; melan along gut dorsal to gut on anterior 1/3 of gut, ventral to gut on posterior 2/3. At 2 1/2~ a few melan present at tip of notocord, mostly ventral but with a couple dorsal to notocord tip in some.

Clupea harengus, observed sizes

Summary: greater diam 1.29 (1.22-1.35), lesser 1.25 (1.20-1.33)

			Greater diameter				Lesser diameter					
Area	Mon	Obs*	**Mean**	SD	Min	Max	**Mean**	SD	Min	Max	Cruise	Sta
GOM e	Sep	10	1.29	.039	1.22	1.35	1.25	.037	1.20	1.33	DL8607	146

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

Glyptocephalus cynoglossus Taxon Code: 183 021 301 Dec 9, 1992

Shape and size: Spherical, 1.27-1.34 (1.10-1.44)

Oil g: None
Egg membrane: Smooth, clear and colorless
Yolk: Homogeneous
Pv space: Narrow (normal)
Myomeres:
Spawning: GOM: May-Oct
GB: Apr-Oct
SNE: Mar-Aug
MAB: Feb-Jul

Pigmentation and form:

Glyptocephalus cynoglossus, observed sizes Oct 4, 1994

Summary: 1.27-1.34 (1.10-1.44)

		Egg diameter						
Area	Mon	Obs*	**Mean**	SD	Min	Max	Cruise	Sta
GM	Sep	12	1.27	.036	1.22	1.33	DL8708	176
SN	Apr	4	1.27	.020	1.25	1.30	AL8701	132
SN	May	3	1.32	.071	1.24	1.37	DL7905	66
SN	May	8	1.34	.073	1.25	1.44	DL7905	81
SN	May	17	1.27	.062	1.10	1.37	DL7905	92
MA s off	May	10	1.27	.045	1.22	1.36	AL9305	6

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

Melanogrammus aeglefinus Taxon Code: 148 010 401 Oct 4, 1994

Shape and size: Spherical, 1.28-1.50 (1.22-1.61)

Oil g: None
Egg membrane: Smooth, clear and colorless
Yolk: Homogeneous
Pv space: Narrow (normal)
Myomeres:
Spawning: GOM: Jan-Jun, Aug
GB: Jan-Aug
SNE: Jan-May
MAB: Mar

Pigmentation and form:

Melanogrammus aeglefinus, observed sizes Oct 4, 1994
Summary: 1.28-1.50 (1.22-1.61)

		Egg diameter						
Area	Mon	Obs*	**Mean**	SD	Min	Max	Cruise	Sta
GM ne	Apr	9	1.46	.033	1.41	1.50	AL8701	286
GB	Jan	10	1.47	.059	1.32	1.51	DL9110	25
GB	Feb	10	1.48	.059	1.39	1.55	DL9103	106
GB	Feb	10	1.50	.060	1.42	1.61	AL9303	119
GB	Mar	10	1.31	.029	1.29	1.37	AL8402	257
GB	Mar	10	1.33	.049	1.27	1.48	AL8402	295
GB	Mar	10	1.47	.053	1.39	1.47	AL8802	200
GB	Mar	10	1.46	.037	1.42	1.51	DL9105	217
GB	Mar	10	1.45	.055	1.35	1.53	DL9105	219
GB	Apr	16	1.48	.054	1.37	1.60	AL8003	6
GB	Apr	10	1.31	.047	1.25	1.40	AL8402	303
GB	Apr	10	1.28	.039	1.24	1.37	AL8402	306
GB	Apr	10	1.28	.035	1.22	1.31	AL8402	308
GB	Apr	8	1.49	.048	1.41	1.57	DL8503	11
GB	Apr	14	1.44	.060	1.28	1.52	DL8503	23
GB	Apr	34	1.45	.060	1.33	1.57	AL8701	225
GB	Apr	10	1.40	.046	1.35	1.50	DL9004	260
GB	Apr	10	1.46	.043	1.35	1.51	AL9203	223
GB	Apr	10	1.44	.056	1.32	1.51	AL9203	234
GB	Apr	10	1.40	.052	1.29	1.45	AL9203	235
GB	Apr	10	1.42	.063	1.39	1.58	AL9304	218
GB	Apr	10	1.43	.043	1.39	1.51	AL9304	224
GB	Apr	10	1.46	.037	1.42	1.51	AL9304	250
SN	Mar	10	1.29	.032	1.25	1.37	AL8402	214
SN	Mar	10	1.36	.054	1.25	1.42	AL8402	230
SN	Apr	10	1.42	.051	1.32	1.51	AL9304	209

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

Gadus morhua Taxon Code: 148 010 301 Oct 3, 1994

Shape and size: Spherical, 1.30-1.49 (1.20-1.64)

Oil g: None
Egg membrane: Smooth, clear and colorless
Yolk: Homogeneous
Pv space: Narrow (normal)
Myomeres:
Spawning: GOM: Jan-Dec
GB: Jan-Dec
SNE: Oct-Dec, Jan-Jul
MAB: Sep, Dec, Feb-May
SAB: Apr (identification OK!)

Pigmentation and form:

Gadus morhua, observed sizes Oct 4, 1994

Summary: 1.30-1.49 (1.20-1.64)

		Egg diameter						
Area	Mon	Obs*	**Mean**	SD	Min	Max	Cruise	Sta
GM	Nov	9	1.37	.053	1.27	1.44	AL8605	362
GB	Nov	10	1.36	.029	1.31	1.40	DL8909	76
GB	Dec	10	1.37	.048	1.29	1.46	DL8710	105
GB	Dec	10	1.37	.039	1.31	1.39	DL8909	105
GB	Dec	10	1.33	.041	1.28	1.40	DL9014	71
GB	Dec	10	1.35	.044	1.28	1.42	DL9014	85
GB	Dec	10	1.33	.026	1.29	1.39	DL9014	123
GB	Dec	10	1.32	.071	1.24	1.50	DL9214	76
GB	Dec	10	1.35	.061	1.27	1.45	DL9214	78
GB	Dec	10	1.39	.047	1.28	1.44	DL9214	81
GB	Dec	10	1.37	.048	1.33	1.48	DL9214	86
GB	Dec	10	1.34	.069	1.27	1.50	DL9214	89
GB	Jan	10	1.39	.064	1.28	1.50	DL9001	66
GB	Jan	10	1.45	.084	1.28	1.57	DL9001	101
GB	Jan	10	1.43	.070	1.31	1.53	DL9001	119
GB	Jan	10	1.46	.039	1.42	1.51	DL9110	17
GB	Jan	10	1.46	.063	1.35	1.58	DL9110	25
GB	Jan	10	1.49	.063	1.42	1.64	DL9110	36
GB	Jan	10	1.39	.042	1.33	1.48	DL9301	86
GB	Jan	10	1.41	.080	1.30	1.55	DL9301	92
GB	Jan	10	1.43	.041	1.38	1.51	DL9301	104
GB	Feb	10	1.43	.054	1.31	1.50	DL9003	64
GB	Feb	10	1.47	.032	1.42	1.51	DL9003	72
GB	Feb	10	1.49	.038	1.42	1.53	DL9103	106
GB	Feb	10	1.47	.069	1.39	1.58	AL9303	119
GB	Mar	10	1.32	.053	1.22	1.40	AL8402	257

GB	Mar	10	1.43	.046	1.35	1.50	AL8802	190
GB	Mar	10	1.43	.047	1.35	1.50	AL8802	200
GB	Mar	10	1.38	.063	1.28	1.46	DL9004	203
GB	Mar	10	1.48	.078	1.31	1.57	DL9105	219
GB	Apr	16	1.44	.063	1.34	1.56	AL8003	6
GB	Apr	6	1.46	.084	1.34	1.59	DL8503	11
GB	Apr	10	1.30	.062	1.22	1.42	AL8402	293
GB	Apr	10	1.32	.046	1.24	1.38	AL8402	303
GB	Apr	10	1.37	.042	1.27	1.40	AL8402	306
GB	Apr	17	1.42	.058	1.34	1.56	AL8701	225
GB	Apr	10	1.40	.040	1.31	1.48	DL9004	260
GB	Apr	10	1.42	.071	1.31	1.53	DL9004	269
GB	Apr	10	1.38	.056	1.29	1.45	AL9203	220
GB	Apr	10	1.42	.072	1.32	1.58	AL9203	223
GB	Apr	10	1.36	.054	1.29	1.48	AL9203	235
GB	Apr	10	1.42	.097	1.26	1.58	AL9304	196
GB	Apr	10	1.45	.063	1.39	1.54	AL9304	218
GB	Apr	10	1.40	.091	1.20	1.48	AL9304	250
SN	Nov	10	1.35	.064	1.28	1.46	DL8909	13
SN	Nov	10	1.33	.061	1.20	1.39	DL9014	3
SN	Jan	10	1.37	.041	1.33	1.44	DL9001	15
SN	Jan	10	1.37	.055	1.31	1.50	DL9001	171
SN	Jan	10	1.34	.079	1.28	1.53	DL9001	176
SN	Jan	10	1.31	.072	1.11	1.42	DL9101	11
SN	Jan	10	1.37	.062	1.28	1.48	DL9101	32
SN in	Jan	10	1.39	.059	1.31	1.50	DL9301	11
SN	Jan	10	1.36	.046	1.27	1.42	DL9301	32
SN	Feb	10	1.35	.063	1.24	1.42	DL9103	15

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

Unknown #212 Taxon Code: 100 000 212 Mar 31, 1993

[Synodontidae, type 2]

Shape and size:	Spherical, sculpted Outer, pt-to-pt diam 1.30-1.32 (1.18-1.39) Inner, smooth diam 1.27-1.30 (1.21-1.37)
Oil g:	None
Egg membrane:	Sculpted, hexagonal pattern [less prominent than in Unk #211]
Yolk:	Homogeneous
Pv space:	Narrow (normal)
Myomeres:	"numerous"
Spawning:	MAB: Apr, May, Aug-Nov SAB: Mar, Apr, Aug

Pigmentation:

MIDDLE
ea-Mid through la-Mid: No pigmentation.

LATE
ea-Late, 9/16~: A few punct melan on dors-lat aspect, abdomen to 1/2 BL.

3/4~: Fine punct melan in 2 dors-lat rows from top of head to ttip, becoming smaller posteriad (and more numerous than in Unk #211). Tail not yet twisted.

7/8~: As at 3/4~, plus a few fine ventral melan on post 1/5 body and a couple ventral melan along gut.

full~: Same but darker. Dors-lat rows head to ttip; melan smaller and more numerous at tail end; a few ventral melan on post 1/4 body. Those at ttip migrating into ffold on the beginning fin rays of caudal fin.
[Differs from Unk #222 in that pigm on Unk #212 is punct, with more pigm dors than vent. and melan tend to form 2 dors-lat rows.]

1 1/8~: Eye pigment forming; scatt dark melan on head, abdomen and body (not 2 dors-lat rows anymore); ventral post-anus series still a row; those in caudal ffold more striking now as they migrate into ffold.

Unknown #212, observed sizes Mar 31, 1993

Summary: outer membrane diam (sculpted) 1.30-1.32 (1.18-1.39)
inner " " (smooth) 1.27-1.30 (1.20-1.37)

		Greater diameter					Lesser diameter					
Area	Mon	Obs*	**Mean**	SD	Min	Max	**Mean**	SD	Min	Max	Cruise	Sta
MA s	Apr	9	1.32	.032	1.30	1.39	1.30	.028	1.28	1.37	DL8503	136
MA s	Apr	1	.-	.-	1.30	1.30	.-	.-	1.28	1.28	DL8503	131
MA s	Apr	1	.-	.-	1.31	1.31	.-	.-	1.28	1.28	DL8503	133
MA s off	May	10	1.31	.038	1.24	1.37	1.27	.038	1.20	1.33	DL8603	2
MA s off	May	2	1.32	.039	1.25	1.29	1.27	.026	1.25	1.29	DL8603	6
MA s	May	1	.-	.-	1.29	1.29	.-	.-	1.27	1.27	DL8603	8
MA off	May	1	.-	.-	1.37	1.37	.-	.-	1.33	1.33	DL8603	11
SA	Apr	2m,4	1.30	.047	1.25	1.36	1.27	.046	1.21	1.33	DL8503	142
SA	Aug	1	.-	.-	1.18	1.18	.-	.-	.-	.-	DL8507	4

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

Unknown #214 Taxon Code: 100 000 214 Mar 31, 1993

Shape and size: Spherical, (1.41)

Oil g: None
Egg membrane: Smooth, clear and colorless
Yolk: Homogeneous
Pv space: Narrow (normal)
Myomeres: approx 30
Spawning: SAB: (Cape Hatteras), Apr, offshore

Pigmentation and form:

LATE
7/8~: Large broad head; heavy-bodied chunky embryo; large, fan-like pectoral fins; h-gut (vent) at approx 1/2 BL. Lightly pigmented; melan small (punct to slightly dend), scatt sparsely over head, body (dors, lat and vent), and on h-gut; couple in dors and anal ffold at approx 2/3 BL; large pect fins peppered with melan along developing rays; yolk ventrum with scatt melan; eyes just beginning to be pigm.

Unknown #214, observed sizes Mar 31, 1993

Summary: (1.41)

		Egg diameter						
Area	Mon	Obs*	**Mean**	SD	Min	Max	Cruise	Sta
SA s	Apr	1	.-	.-	1.41	1.41	DL8503	136

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

Anchoa hepsetus Taxon Code: 121 060 101 Dec 4, 1992

Shape and size:	Non-spherical; Greater diam 1.50-1.63 (1.34-1.76) Lesser diam .78-.87 (.73-.92)
Oil g:	None
Egg membrane:	Smooth, clear and colorless
Yolk:	Segmented
Pv space:	Narrow (normal)
Myomeres:	
Spawning:	SNE: Jul, Aug MAB: Apr-Sep SAB: Apr

Pigmentation and form:

No pigmentation at any stage.

Anchoa hepsetus, observed sizes Jun 26, 1989

Summary: greater diam: 1.50-1.63 (1.34-1.76), lesser .78-.87 (.73-.92)

		Greater diameter					Lesser diameter					
Area	Mon	Obs*	**Mean**	SD	Min	Max	**Mean**	SD	Min	Max	Cruise	Sta
MA	May	11	1.50	.080	1.34	1.63	.78	.030	.73	.83	DL8003	2
MA	May	10	1.63	.059	1.53	1.72	.85	.031	.79	.88	DL8003	9
MA	May	10	1.62	.089	1.48	1.76	.87	.031	.82	.92	DL8003	17
MA n	Jun	10	1.58	.076	1.46	1.66	.81	.039	.76	.89	DL8604	65

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

Unknown #125 Taxon Code: 100 000 125 Mar 31, 1993

Shape and size: Spherical; double membrane
Outer diam; 1.64-1.72 (1.51-1.79)
Inner diam; 1.60-1.68 (1.48-1.73)

Oil g: None
Egg membrane: Smooth; copper tint; double membrane
Yolk: Segmented
Pv space: Wide
Myomeres:
Spawning: SNE: Sep-Dec

Pigmentation and form:

LATE
1 1/4~: No pigmentation. Vent is at 7/8 BL; well developed ffold.

Unknown #125, observed sizes Oct 3, 1994

Summary: Outer diam 1.64-1.72 (1.51-1.79)
Inner diam 1.60-1.68 (1.48-1.73)

			Outer diameter				Inner diameter					
Area	Mon	Obs*	**Mean**	SD	Min	Max	**Mean**	SD	Min	Max	Cruise	Sta
SN off	Sep	1m	.	.	1.73	1.73	.	.	1.70	1.70	DL8507	85
SN off	Sep	1e	.	.	1.73	1.73	.	.	1.70	1.70	DL8507	100
SN off	Sep	4e,4	1.72	.047	1.66	1.79	1.68	.041	1.62	1.73	DL8607	97
SN off	Sep	1e	.	.	1.66	1.66	.	.	1.60	1.60	DL9110	107
SN off	Oct	1	.	.	1.70	1.70	.	.	1.66	1.66	DL8508	111
SN off	Oct	1	.	.	1.73	1.73	.	.	.	.	DL8508	114
SN off	Oct	1	.	.	1.75	1.75	.	.	1.72	1.72	DL8508	159
SN off	Oct	1e,1m,1	1.67	.046	1.62	1.72	1.61	.055	1.55	1.66	DL8508	163
SN off	Nov	1e,1m	1.64	.026	1.62	1.66	1.60	.014	1.59	1.61	DL8510	65
SN off	Nov	1	.	.	1.51	1.51	.	.	1.48	1.48	DL8510	83
SN off	Nov	1	.	.	1.70	1.70	.	.	1.66	1.66	DL8610	65
SN	Nov	1	.	.	1.70	1.70	.	.	1.66	1.66	DL8610	82
SN off	Nov	6e	1.71	.040	1.66	1.75	.	.	.	.	DL8610	83
SN	Nov	2e	1.68	.026	1.66	1.70	1.64	.026	1.62	1.66	DL8610	85
SN off	Nov	1e	.	.	1.72	1.72	.	.	1.68	1.68	DL8710	50
SN off	Nov	1e	.	.	1.73	1.73	.	.	.	.	DL8710	68

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

Unknown #175 Taxon Code: 100 000 175 Jan 19, 1993

Shape and size:	Spherical; double membrane outer 1.84 (1.80-1.91), inner 1.72 (1.71-1.77)
Oil g:	None
Egg membrane:	Double
Yolk:	Homogeneous
Pv space:	
Myomeres:	approx 97
Spawning:	SNE: Oct MAB: Mar, Jul and Aug SAB: Apr

Pigmentation and form:

Late: Distinctive long bifurcated h-gut.

1 1/2~: Melan scatt on yolk; double row of faint and punct melan along vent aspect of body; melan along vent portion of gut; scatt melan on eyes (ant and post-lat), more melan on posterior portion of eyes.

Unknown #175, observed sizes Oct 5, 1989

Summary: double membrane, outer 1.84 (1.80-1.91)
inner 1.72 (1.71-1.77)

			Greater diameter				Lesser diameter					
Area	Mon	Obs*	**Mean**	SD	Min	Max	**Mean**	SD	Min	Max	Cruise	Sta
MA	Mar	1	.-	.-	1.88	1.88	.-	.-	1.77	1.77	AL8602	59
MA so	Jul	1e,1	1.84	.064	1.80	1.89	1.72	.007	1.72	1.73	EV8006	2
MA s	Aug	1	.-	.-	1.91	1.91	.-	.-	1.77	1.77	BE7901	1
MA s	Aug	1	.-	.-	1.81	1.81	.-	.-	1.73	1.73	DL8507	4
MA s off	Aug	1	.-	.-	1.81	1.81	.-	.-	1.71	1.71	DL8708	2

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

Unknown #228 Taxon Code: 100 000 228 Sep 24, 1992

Shape and size: Spherical (almost); .83 (.80-.84)
some slightly oval, some slightly collapsed

Oil g: Single; (<.23, exp)
Egg membrane: Single, smooth, clear and colorless
Yolk: Homogeneous
Pv space: Narrow (normal)
Myomeres:
Spawning: MAB: Jan (central, offshore)

Pigmentation and form:

MIDDLE

ea- to mid-Mid: Melan small and dark; occur on embryo and yolk (possibly on oil g, not sure due to ruptured condition of these oil g's). Melan scatt on head, generally along neural grooves; a couple lat, post to eyes; tend to be in dors-lat rows over h-brain with a couple scatt directly dorsally; then post tending to be in 2 dors-lat rows to approx 9/10 BL; a few vent-lat melan on post 1/2 body. A few on yolk, which tend to be lat to post 1/2 body and near oil g. A relatively narrow embryo.

Unknown #228, observed sizes Jul 19, 1989

Summary: .83 (.80-.84), og (<.23, exp)

		Egg diameter					Oil globule diameter						
Area	Mon	Obs*	**Mean**	SD	Min	Max	Obs	**Mean**	SD	Min	Max	Cruise	Sta
MA c off	Jan	10m	.83	.012	.80	.84	10	.-	.-	<.23	<.23	DL8601	46

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

Unknown #113 Taxon Code: 100 000 113 Dec 21, 1992

Shape and size: Spherical; (2.14-2.30)

Oil g: None
Egg membrane:
Yolk: Segmented
Pv space:
Myomeres:
Spawning: MAB: Mar, Sep and Nov (south of Chesapeake Bay, offshore)

Pigmentation:

No notes on pigmentation (yet).

Unknown #113, observed sizes

Summary: (2.14-2.3)

		Egg diameter						
Area	Mon	Obs*	**Mean**	SD	Min	Max	Cruise	Sta
MA	Sep	1e	.-	.-	2.30	2.30	DL8106	15
MA s	Nov	1e	.-	.-	2.14	2.14	DL8510	6

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

Hippoglossoides platessoides Taxon Code: 183 020 201 Oct 3, 1994

Shape and size: Spherical, 2.06-2.38 (1.80-2.67)

Oil g: None
Egg membrane: Smooth, clear and colorless
Yolk: Homogeneous
Pv space: Wide
Myomeres:
Spawning: GOM: Jan-Dec
GB: Jan-Jun, Dec
SNE: Feb-May

Pigmentation and form:

Hippoglossoides platessoides, observed sizes Oct 4, 1994

Summary: 2.06-2.38 (1.80-2.67)

		Egg diameter						
Area	Mon	Obs*	**Mean**	SD	Min	Max	Cruise	Sta
GM w in	Apr	9	2.38	.191	2.05	2.67	DL8703	300
GM w in	Apr	1m,9	2.32	.098	2.06	2.41	DL8703	307
GM w in	Apr	10	2.24	.154	1.95	2.44	AL8802	304
GM w in	Apr	10	2.06	.123	1.90	2.24	DL9105	268
GM w	Apr	10	2.22	.082	2.14	2.43	AL9203	305
GM w in	Apr	10	2.17	.086	2.05	2.30	AL9304	260
GM	May	10	2.21	.102	2.06	2.43	DL7905	169
GM	May	12	2.29	.126	2.05	2.44	DL8002	3
GM	May	12	2.31	.116	2.05	2.48	DL8002	4
GM	Jun	10	2.17	.165	1.91	2.43	DL8003	93
GB	Apr	3	2.23	.217	1.99	2.39	DL8503	11
GB	Apr	2e,4m,5	2.33	.101	2.22	2.55	DL8503	27
GB	Apr	6	2.18	.111	2.10	2.38	AL8701	228
GB e	Apr	5	2.29	.110	2.17	2.41	AL8701	258
GB	Apr	10	2.24	.119	2.06	2.44	DL9004	262
GB	Apr	8	2.13	.077	2.02	2.21	AL9203	225
GB	Apr	10	2.17	.168	1.80	2.39	AL9203	235
GB	Apr	10	2.17	.161	2.02	2.46	AL9304	250

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

Zu cristatus Taxon Code: 153 030 301 Dec 21, 1992

Shape and size:

Oil g:
Egg membrane:
Yolk:
Pv space:
Myomeres:
Spawning: GB: May

Pigmentation and form:

Zu cristatus, observed sizes Jun 26, 1989

Summary: (2.30)

		Egg diameter						
Area	Mon	Obs*	**Mean**	SD	Min	Max	Cruise	Sta
GB	May	1	.-	.-	2.30	2.30	DL8203	4

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

Unknown #229 Taxon Code: 100 000 229 Mar 31, 1993

[tentative identification: *Scomberesox saurus*]

Shape and size: Spherical, (2.40-2.57)

Oil g: None
Egg membrane: Finely sculpted, similar to, but slightly more coarse than in Uranoscopidae; slightly sticky; this egg floats.
Yolk: Homogeneous
Pv space: Narrow (normal); approx 0.2 all around
Myomeres: Not counted, but obviously numerous (60 or 70).
Spawning: SNE: Nov, offshore, south from Long Island and in Hudson Canyon

Pigmentation and form:

LATE

5/8~: This egg floats, the surface has debris clinging to it. Tail twisted and flexed; the "caudal fin" bud is rounded (precursor to the shape of the 3/4~ stage). Finfold approx 1/4 BD, at post-anus location. Anus at about 8/10 BL. Head is strikingly broad, with large eyes and no snout; body is narrow and has many myomeres; pect buds are well formed. Yolk pigmentation is striking; there are two large areas of evenly scatt dark and dend melan on the ant-dors surface, near head and abdomen. On the embryo there are a few melan on the head dorsum, over the eyes and mid-brain lobes; then extending post first as longitudinal swaths lat to the h-brain and pect area, then becoming dors-lat and gradually diminishing and ending at about 2/3 BL. Also, there are a couple melan dors-lat on either side of caudal peduncle, at about 90% BL. There appear to be internal melan near the h-gut; probably more obvious at earlier stages.

3/4~: Anus at approx .65 to .70 BL; ffold narrow and appears absent at caudal peduncle. Caudal development seems advanced -- it is dorsally and ventrally broadened and surrounded by ffold, sort of a round and ping-pong-paddle shape caudal fin. Head shape is striking; it is blunt (almost no snout) with large eyes. Pectoral fin buds present. Pigment on yolk is striking; there are patches of dend and coarsely spaced melan on either side of head and abdomen occupying approx 1/3 of yolk surface; none elsewhere on yolk. On the embryo pigmentation is restricted to the anterior 1/2. There are a few melan scatt dorsally on head between eyes, then dors-lat and lat to h-brain, then diminishing and stopping at approx 1/2 BL. Egg surface sticky, with debris; the egg floats.

Unknown #229, observed sizes Mar 31, 1993

Summary: (2.40-2.57)

		Egg diameter						
Area	Mon	Obs*	**Mean**	SD	Min	Max	Cruise	Sta
SN w off	Nov	1	.-	.-	2.57	2.57	DL8510	64
SN w off	Nov	1	.-	.-	2.40	2.40	DL8610	62

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

Unknown #195 Taxon Code: 100 000 195 Mar 31, 1993

[tentative identification: Exocoetidae]

Shape and size:	Spherical; (3.10-3.11)
Oil g:	None
Egg membrane:	Smooth, clear and colorless
Yolk:	Homogeneous
Pv space:	Narrow (normal)
Myomeres:	approx 40, approx 17 post-anus
Spawning:	MAB: Mar offshore SAB: Apr offshore

Pigmentation and form:

LATE

5/8+~: Quite advanced, caudal rays forming, anal and dorsal fin basal elements forming, large pect fins (no rays), pelvic fins, pigm just starting in eyes. Myomeres count post-anus 17.(2), total = 40 or so; dors fin = 13 or 14 elements, anal fin = 12 or 13 elements; caudal rays = 10 rays forming. Melan very fine and punct and numerous; scatt on post 1/2 head dors, then post as 2 dors-lat swaths of fine, dense melan dwindling to 2 dors-lat rows which terminate at approx 2/3 BL under dorsal fin origin; also a couple of fine punct melan on dors of caudal peduncle.

Unknown #195, observed sizes

Summary: (3.10-3.11)

		Egg diameter						
Area	Mon	Obs*	**Mean**	SD	Min	Max	Cruise	Sta
MA off	Mar	1	.-	.-	3.10	3.10	AL8202	112
SA off	Apr	1	.-	.-	3.11	3.11	DL8503	138

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