

Table 14

Distinguishing characters of fish eggs occurring in the Northeast Pacific Ocean and Bering Sea arranged by size.

<i>Citharichthys stigmaeus</i> (0.62–0.66 mm)	Smooth chorion, small size; one oil globule, 0.06–0.08 mm.
<i>Paralichthys californicus</i> (0.68–0.83 mm)	Smooth chorion, small size; one oil globule, 0.12–0.16 mm.
<i>Limanda aspera</i> (0.76–0.85 mm)	Smooth chorion, small size; no oil globule.
<i>Citharichthys sordidus</i> (0.78–0.84 mm)	Smooth chorion, small size; one oil globule, 0.08–0.11 mm.
<i>Parophrys vetulus</i> (0.80–1.05 mm)	Distinguish from <i>Isopsetta</i> , <i>Platichthys</i> , and <i>Psettichthys</i> by two rows of pigment between the eyes and moderate amount of ventral pigment.
<i>Psettichthys melanostictus</i> (0.83–1.04 mm)	Distinguish from <i>Isopsetta</i> and <i>Parophrys</i> by pigment scattered uniformly over head and body, and pigment on yolk. Distinguish from <i>Platichthys</i> by pigment on yolk other than area of pectoral fins and slender-bodied embryo.
<i>Isopsetta isolepis</i> (0.84–1.10 mm)	Distinguish from <i>Parophrys</i> , <i>Platichthys</i> , and <i>Psettichthys</i> by near-absence of head pigment, “saddle” of pigment behind head, and near-absence of pigment along the ventral midline to tail.
<i>Platichthys stellatus</i> (0.88–1.30 mm)	Distinguish from <i>Isopsetta</i> and <i>Parophrys</i> by pigment scattered uniformly over head and body, almost continuous line of pigment around tail, and finfold pigment. Distinguish from <i>Psettichthys</i> by large size of embryo and lack of yolk pigment except in area of pectoral fins.
<i>Bathylagus ochotensis</i> (0.92–1.10 mm)	Pustules on inner surface of chorion; segmented yolk; >10 oil globules coalesce to 2 at equatorial poles; no pigment.
<i>Gadus macrocephalus</i> (0.98–1.08 mm)	Thick chorion with golden color; size of egg.
<i>Merluccius productus</i> (1.07–1.18 mm)	Chorion thin, smooth; one oil globule, 0.27–0.34 mm; pigment on late-stage embryo in four dorsal patches and one ventral patch opposite posterior dorsal patch; eyes of late-stage embryo unpigmented.
<i>Tetragonurus cuvieri</i> (1.10–1.30 mm)	Chorion golden with pink tint; one oil globule, 0.25–0.30 mm; double row of dorsal pigment splits at nape to outline brain and extending onto snout, ventral pigment over gut extending along ventral margin of tail, on oil globule.

<i>Sebastolobus</i> spp. (1.15–1.30 mm)	Chorion thin, appears to have pale blue color in transmitted light, egg shape out-of-round; one yellow oil globule, 0.10–0.20 mm; early to middle-stage embryo unpigmented; late-stage embryo with large dorsal finfold extending onto head; pigment blotch on posterior gut and opposing dorsal and ventral blotches at about 75% body length.
<i>Pleuronichthys coenosus</i> (1.20–1.56 mm)	Hexagonal sculpturing on chorion; pigment lightly scattered on yolk, heavy uniform pigment on body; no pigment on tail except at tip.
<i>Gadus chalcogrammus</i> (1.20–1.77 mm)	Thin chorion; late-stage embryo has two postanal bars and lacks pigment at end of tail; no pigment on yolk.
<i>Engraulis mordax</i> (1.23–1.55 x 0.65–0.82 mm)	Ellipsoidal shape; segmented yolk.
Macrouridae (1.38–1.48 mm)	One large orange oil globule, chorion usually ornamented with raised patterns (hexagons). North Pacific coast (similar to Macrouridae 1.92–2.08 mm in Gulf of Alaska; pattern may not be as raised)
<i>Tactostoma macropus</i> (1.38–1.55 mm)	Smooth chorion; segmented yolk; large perivitelline space; one oil globule, 0.30–0.40 mm; long gut length, 80% NL.
<i>Nansenia candida</i> (1.39–1.56 mm)	Pustules on inner surface of chorion; segmented yolk; one oil globule, 0.41–0.49 mm; pigment on yolk and along gut; long gut length, 70% NL.
<i>Bathylagus pacificus</i> (1.40–1.60 mm)	Chorion covered with small contiguous bumps (looks like snakeskin); segmented yolk ; numerous oil globules of varied size (0.02–0.20 mm) at vegetal pole, coalescing and forming 2 polar groups in late-stage eggs.
<i>Lyopsetta exilis</i> (1.47–1.71 mm)	Pigment on late-stage embryo covers entire body with heavy concentration on caudal finfold; pigment on ventral surface of yolk.
<i>Cololabis saira</i> (1.50–1.80 x 1.60–2.13 mm)	Chorion oval with 12–20 adhesive filaments at pole and 1 thicker lateral filament; pigment on yolk and completely covering late-stage embryo.
<i>Ichthyos lockingtoni</i> (1.52–1.80 mm)	One oil globule, 0.30–0.44 mm; uninterrupted row of pigment along dorsal surface of gut and ventral surface of tail to around notochord tip, on finfold around notochord tip, and on ventral surface of oil globule.

<i>Boreogadus saida</i> (1.53–1.90 mm)	Thin chorion; late-stage embryo has two postanal bars and lacks pigment at end of tail; no pigment on yolk. Distinguish from late-stage <i>Gadus chalcogrammus</i> by larger head, heavier pigment on head, size, geographic location (northern Bering Sea).
<i>Atheresthes stomias</i> (1.58–1.98 mm)	Smooth chorion, medium thickness; embryo and yolk unpigmented. Size, timing (winter), and occurrence in deep water overlaps <i>Anoplopoma fimbria</i> . Late-stage embryo has preanal length of 40%; myomeres 47–50.
<i>Leuroglossus schmidti</i> (1.65–1.90 mm)	Segmented yolk; one oil globule, 0.35–0.40 mm, positioned in yolk next to midpoint of gut; late-stage embryo pigmented on tip of notochord, caudal finfold, and on ventral surface of gut directly over oil globule.
<i>Pleuronectes quadrituberculatus</i> (1.67–2.21 mm)	Thick, “wavy” chorion with coppery color, pigment on posterior half of ventral surface of yolk, late-stage embryo has double row of postanal ventral pigment.
<i>Pleuronichthys decurrens</i> (1.80–2.10 mm)	Hexagonal sculpturing on chorion; pigment lightly scattered on yolk, heavy uniform pigment on body; no pigment on tail except at tip.
<i>Glyptocephalus zachirus</i> (1.80–2.20 mm)	Thick chorion with pebbled surface, pigment on ventral surface of yolk, late-stage embryo has 4 bands and is curled 2½ times around top of yolk.
<i>Anoplopoma fimbria</i> (1.85–2.20 mm; usually ≥ 2.00)	Smooth chorion, medium thickness; embryo and yolk unpigmented. Size, timing (winter), and occurrence in deep water overlaps <i>Atheresthes</i> spp. Late-stage embryo has preanal length of 50–60%; myomeres 61–66.
<i>Macrouridae</i> (1.92–2.08 mm)	One large orange oil globule, 0.50–0.80 mm; chorion usually ornamented with raised patterns (hexagons).
<i>Microstoma</i> sp. (2.00–2.40 mm)	Pustules on inner surface of chorion; segmented yolk; one large oil globule, 0.49–0.82 mm; pigment on yolk and along ventral surface of trunk above gut, extending onto head and tail region.
<i>Microstomus pacificus</i> (2.05–2.68 mm)	Smooth chorion; pigment on ventral surface of yolk in later stages, late-stage embryo has moderately large pigment spots in a row laterally on tail and pigment on caudal finfold.
<i>Trachipterus altivelis</i> (2.60–3.50 mm)	Chorion smooth and thick, appears pink or red; precocious development of elongate anterior dorsal and pelvic-fin rays with terminal pigmented swellings

<i>Chauliodus macouni</i> (2.69–3.17 mm)	Smooth chorion; segmented yolk; large perivitelline space; long gut length, 87% NL.
<i>Icosteus aenigmaticus</i> (2.69–3.28 mm)	Chorion sometimes rose-tinted; one oil globule, 0.42–0.60 mm, decreasing in size with development; pigment on head, dorsal body, caudal finfold, and oil globule; opposing patches of pigment on dorsal and anal finfolds.
<i>Embassichthys bathybius</i> (2.70–3.10 mm)	Early to early-late-stage egg is similar to <i>Microstomus</i> , but is larger and pigment on embryo is finer; late-stage embryo has 3 postanal bands and pigment on caudal finfold.
<i>Hippoglossoides elassodon</i> (2.75–3.75 mm)	Very thin chorion (easily broken); large perivitelline space; embryo covered with small closely-spaced melanophores that later migrate to four postanal bands; pigment on the dorsal, anal, and caudal finfolds.
<i>Hippoglossus stenolepis</i> (2.90–3.80 mm)	Large size; embryo and yolk unpigmented. Late-stage embryo has 49–51 myomeres.
<i>Reinhardtius hippoglossoides</i> (3.50–4.50 mm)	Large size; chorion may be tinted red; embryo and yolk unpigmented. Late-stage embryo has 60–65 myomeres.