

Note

First sighting of Purple-striped Jellyfish (*Chrysaora colorata*) in Canadian Pacific waters

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Abstract

We report the first record of a Purple-striped Jellyfish (*Chrysaora colorata*) from Canadian waters. A single specimen, ~65 cm in bell diameter, was collected in a trawl catch on 4 October 2024 in near-surface waters, off Clayoquot Sound, British Columbia, about 400 km from the previous most northern, research-grade record in the United States. Identification of our specimen was confirmed based on bell texture and size, colouration, number and shape of lappets, and the presence of a quadralinga. In the future, changing oceanographic conditions associated with climate change may lead to *C. colorata* becoming more common at more northerly latitudes.

Key words: Purple-striped Jellyfish; *Chrysaora colorata*; British Columbia; distribution

Résumé

Nous rapportons la première observation de la méduse *Chrysaora colorata* à la Colombie-Britannique, Canada. Un seul spécimen, d'environ 65 cm de diamètre, a été observé dans les prises de chalut le 4 octobre 2024 dans les eaux près de la surface, à la baie Clayoquot, à environ 400 km de la précédente observation la plus septentrionale, de qualité scientifique, enregistrée aux États-Unis. L'identification de ce spécimen a été confirmée sur la base de la texture et de la taille de l'ombrelle, de la coloration, du nombre et de la forme des lappets, et de la présence d'un quadralinga. À l'avenir, les changements des conditions océanographique associés au changement climatique pourraient amener *C. colorata* à devenir plus commune à des latitudes plus septentrionales.

Mots-clés : *Chrysaora colorata*; Colombie-Britannique; répartition

Purple-striped Jellyfish (*Chrysaora colorata*) is a species of sea nettle found primarily off the coast of southern California (Wrobel and Mills 1998). First described by Russell (1964), it was originally designated *Pelagia colorata*, but the genus name was revised to *Chrysaora* Péron & Lesueur, 1810 by Gershwin and Collins (2002). The medusae are large, up to 100 cm in bell diameter (Morandini and Margues 2010). The umbrella is hemispherical with a white to silver background colour and 16 deep purple streaks that radiate from an apical ring (Gershwin and Collins 2002; Morandini and Margues 2010). The exumbrella is grainy in texture but lacking prominent nematocyst warts (Gershwin and Collins 2002). The 32 broad, marginal lappets (four per octant) have rounded corners and are darkly pigmented (Russell 1964; Gershwin and Collins 2002). Eight marginal tentacles

are reddish in colour, except in the proximal 5–7 cm where they are colourless (Gershwin and Collins 2002). The four oral arms are frilly, spiralled, intertwined, and taper toward the ends (Gershwin and Collins 2002). This species also possesses a quadralinga, an internal structure consisting of four rigid mesogleal columns capped with rounded projections. These columns attach to the mouth of the jellyfish on one end, and the gonadal pouches on the other (Gershwin and Collins 2002).

To date, no records of *C. colorata* have been published or verified outside United States (US) waters. On 4 October 2024 at 1026 PST, a Purple-striped Jellyfish was captured during a juvenile Pacific salmon (*Oncorhynchus* spp.) trawl survey conducted by Fisheries and Oceans Canada (Tabata *et al.* 2026). The specimen was captured on the continental shelf

(49.2114°N, 126.3258°W), ~17 km off Clayoquot Sound (Figure 1). Duet temperature and depth sensors (RBR Ltd., Ottawa, Ontario, Canada), mounted on the headrope and footrope of the trawl net, recorded at 30-s intervals (0.033 Hz) during active fishing. The jellyfish was caught in the upper 30 m of water. The average water temperature recorded at the headrope (mean of 20 m depth) at this time was 11.69°C. Average water temperature recorded from the trawl footrope (mean of 30 m depth) was 10.21°C.

The specimen was not intact, but the bell diameter was estimated to be 65 cm from lappet to lappet, using an Ichthystick Electronic Fish Measuring Board (Sexton Corporation, Salem, Oregon, USA). It was placed top-down on the measuring board and the most intact line possible between opposing lappets was used to estimate the bell diameter. Features diagnostic for *C. colorata* include the 30 remaining rectangular-shaped marginal lappets, with rounded corners and deep purple colour (Figure 2a); the proximal ends of three tentacles remained attached to the bell. These tentacle remains were clear in colour and arose from the margins of the bell (Figure 2b); the bell was not intact enough to determine the presence of an apical ring or 16 radiating purple streaks, but what remained of the exumbrellar surface was finely granulated, lacking distinct nematocyst warts, and was flecked with purple pigment on a translucent, white background. Attached to the bell were four gelatinous columns—the remains of

the quadralinga (Figure 2c). Although the quadralinga did not remain attached to the bell during handling, the ends of these columns were attached to the remains of the oral arms of the specimen, and the top portions were attached to the inner parts of the bell before falling off. Circumstances did not allow retention of the specimen, however the features documented above and in Figure 2 confirm the species as *C. colorata*. This jellyfish (and the individual we caught) is fairly distinct from other jellyfish in Canadian and US waters. Mauve Stinger (*Pelagia noctiluca*) in the US could be mistaken for specimens of *C. colorata* at smaller sizes, but our specimen was too large and had too many lappets to be *P. noctiluca*. The colouration and texture of the bell (plus the quadralinga) distinguished our specimen from other species of *Chrysaora* in Canada.

This is the first documented sighting of *C. colorata* in Canadian waters; it occurred about 400 km from the most northern, research-grade record in the US in iNaturalist, which is from Cannon Beach, Oregon (Wembleyeml 2025; identification confirmed by K.L.F.). This jellyfish is thought to be an oceanic species, potentially associated with continental slope water (Russel 1965; Wrobel and Mills 1998); however, much of the basic biology and life history of *C. colorata* is still unknown. Questions such as where it breeds, how long it lives, and where the polyp life stages are found in the wild are currently unanswered (Gershwin and Collins 2002). In the future, changing oceanographic conditions associated with climate change may lead to *C. colorata* becoming more common at more northerly latitudes.

Author Contributions

Writing – Original Draft: J.R.K. and K.L.F.; Writing – Review & Editing: K.L.F.; Conceptualization: J.R.K. and K.L.F.; Investigation: K.L.F.

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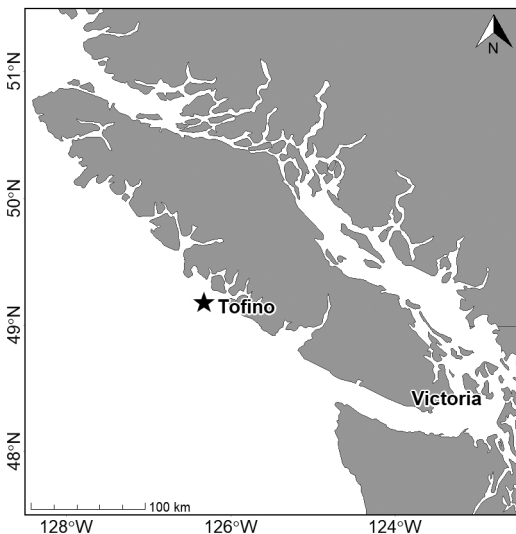


FIGURE 1. Location of Purple-striped Jellyfish (*Chrysaora colorata*; black star) captured by surface trawl gear off Clayoquot Sound, British Columbia (49.2114°N, 126.3258°W) on 4 October 2024. Map data: Massicotte and South 2023.

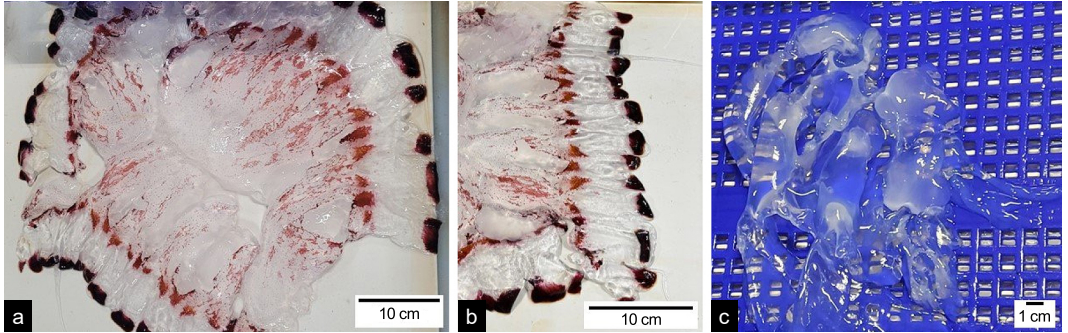


FIGURE 2. Diagnostic remains of the bell of a Purple-striped Jellyfish (*Chrysaora colorata*). a. Remaining lappets ($n = 30$), background colour, and distribution of purple pigment on the exumbrellar surface. Bell diameter of the remains was ~ 65 cm. b. Remaining marginal tentacles, coloured lappets, and grainy surface. c. Remains of the quadralinga, four rigid gelatinous columns attached to the remains of the oral arms. Photos: Kelsey Flynn.

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