



A taxonomic review of janthinid gastropod molluscs from California Current Waters off the west coast of North America

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Abstract

Taxonomic characterization of janthinid gastropods, morphological characteristics, oceanic habitat and occurrence in coastal waters off the west coast of North America are reviewed. The two species (*Janthina umbilicata* and *J. janthina*) recorded from west coast waters are described and their shell morphologies illustrated.

Introduction

Janthinids are gastropod mollusks that live at the ocean surface as members of the planktonic neuston. Their bodies are submerged immediately beneath the ocean surface with the shell spire directed downward. They attach by means of a flattened foot to a bubble raft that is constructed of multiple mucus-entrapped air bubbles. The family consists of two genera, *Janthina* and the little known *Reclusia*.

Repositories:

LSL Linnean Society London, United Kingdom.

NHMUK Natural History Museum of the United Kingdom, London, United Kingdom.

Systematics

Epitoniidae Berry, 1910 (1812)

Description. Shell to 40 mm in height, shape globose to trochoid; walls thin, weakly to moderately striated; spire low to low-conical; outer lip of aperture continuous or indented; operculum absent.

Distribution. Mostly cosmopolitan at tropical to subtropical latitudes.

Remarks. Among the pelagic snails, the janthinids are the least modified for an open ocean existence (reviewed by Lalli & Gilmer 1989, Beu 2017). Adaptations to life at the ocean surface include a thin shell, an enlarged flat foot that secretes mucus to entrap air bubbles and by accumulation build a bubble raft, and a modified radula lacking central teeth and with lateral teeth that are elongated and terminally hooked to snare prey. All species feed on the surface cnidarians *Velella* and *Porpita*.

Janthina Roding, 1798

Description. Head large with distally forked tentacles and muscular eversible proboscis. Foot large and divided into three regions; an anterior section that entraps air bubbles in mucus, a median area used for egg capsule attachment to the underside of the float and formation of the float, and a posterior section for holding the animal to the float (described and illustrated by Lalli & Gilmer 1989, Beu 2017).

Remarks. The generic name is spelled with an initial J in the original publication; *Ianthina* is an emendation.

***Janthina umbilicata* d'Orbigny, 1841**

(Figure 1A)

Janthina umbilicata d'Orbigny, 1841: 414, pl. 20, figs 22–23. Type. Four syntypes NHMUK 1854.12.4.403 [fide Beu 2017]. Atlantic Ocean.

Janthina globosa Blainville, 1822: 155 [non Swainson, 1822]. Neotype NHMUK 1857.12.4.403 (Beu 2017: 196). Atlantic Ocean.

Ianthina megastoma A. Adams, 1861: 403. Neotype NHMUK 1857.12.4.403 (Beu 2017: 196). Atlantic Ocean.

Description. Shell small, to about 20 mm, color deep violet to purple, shape globose-ovate, surface weakly striated, spire moderately elevated with a well-defined apex. Lip of aperture strongly indented medially. Shell surface raised as prominent medial ridge extending around body whorl.

Distribution. During periodic El Nino events in the western North Pacific Ocean a northward-flowing countercurrent forms that extends in a narrow band along the coast to as far as Washington and Canada. At such times this species can extend its range northward along the Pacific coast. Off Bodega Bay in northern California *J. umbilicata* was the species most frequently recorded by J. Sones (pers. comm.).

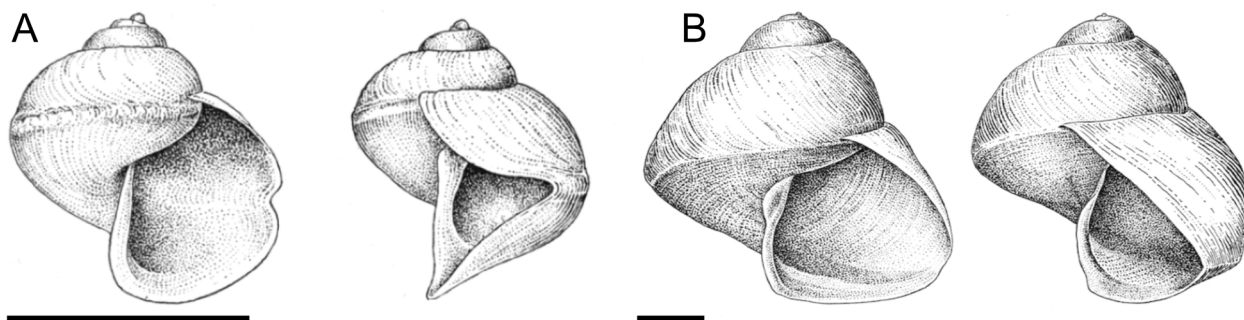


FIGURE 1. A. Shell of *Janthina umbilicata* in apertural view, centered (left) and rotated 90° counterclockwise (right). Drawings modified from Laursen (1953: 26). B. Shell of *Janthina janthina* in apertural view, centered (left) and rotated 90° counterclockwise (right). Drawings modified from Laursen (1953: 16). Scale bars = 1 cm.

***Janthina janthina* (Linnaeus, 1758)**

(Figure 1B)

Helix janthina Linnaeus, 1758: 772. Type. Lectotype (designated by Beu 2017, Laursen 1953: pl. 15.7) LSL. “Europa, Asia, Africa; in M. Mediterraneo”.

For complete synonymy see Laursen (1953) and Beu (2017).

Description. Shell to 31 mm, color light violet, shape globose to globose-ovate, spire low to flat, surface with weakly developed irregular striations, outer lip of aperture continuous (not indented medially); body whorl lacking medial ridge.

Distribution. Like the previous species the range can extend northward along the coast during El Nino years, as recorded by J. Sones (pers. comm.) in a single record off Bodega Bay.

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