

New records for the pleustonic snails *Janthina* and *Recluzia* (Gastropoda: Epitoniidae) for Chile

Nuevos registros de los caracoles pleustónicos *Janthina* y *Recluzia* (Gastropoda: Epitoniidae) para Chile

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ABSTRACT

Janthina and *Recluzia* species are pleustonic snails that feed on cnidarians and can be easily differentiated by their shells, which are of a striking purple to violet-blue hue in *Janthina*, and whitish to brownish in *Recluzia*. In the southeastern Pacific off Chile, four of the five extant *Janthina* species and a single species of *Recluzia* have been recorded. In this work, we present new records for *Janthina janthina* (Linnaeus, 1758) for specimens collected at San Felix Island, in the Desventuradas Islands, and for *Recluzia lutea* (Bennet, 1840) for a specimen collected at Robinson Crusoe Island, in the Juan Fernandez Archipelago. These records fill a gap in the geographical distribution of *J. janthina* in the southeastern Pacific and extend the distribution of *R. lutea* in about 3000 km from its previous record at Easter Island, being the most easterly record for the species.

Keywords: Cnidaria, neustonic gastropods, new records, South Pacific.

RESUMEN

Las especies de *Janthina* y *Recluzia* son caracoles pleustónicos que se alimentan de cnidarios y se pueden diferenciar fácilmente por sus conchas, que son de un llamativo tono púrpura a azulino en *Janthina*, y de blanquecino a marrón en *Recluzia*. En el Pacífico sureste frente a Chile se han registrado cuatro de las cinco especies existentes de *Janthina* y una sola especie de *Recluzia*. En este trabajo presentamos nuevos registros de *Janthina janthina* (Linnaeus, 1758) para especímenes recolectados en la Isla San Félix, en las Islas Desventuradas, y de *Recluzia lutea* (Bennet, 1840) para un ejemplar recolectado en la Isla Robinson Crusoe, en el Archipiélago Juan Fernández. Estos registros llenan un vacío en la distribución geográfica de *J. janthina* en el Pacífico sureste y extienden la distribución de *R. lutea* en unos 3000 km desde su registro anterior en Isla de Pascua, siendo el registro más oriental para la especie.

Palabras clave: Cnidaria, gasterópodos neustonicos, nuevos registros, Pacífico Sur.

Epitoniid snails of the genus *Janthina* and *Recluzia* are striking pleustonic gastropods which live floating at the ocean's surface using bubble rafts made of hardened mucus (Beu, 2017). *Janthina* species prey on the also pleustonic hydroids *Veleva veleva* (Linnaeus, 1758) and *Physalia physalis* (Linnaeus, 1758), while *Recluzia* species have been found preying on floating actinarians of the family Minyadidae. Due to the shell polymorphism of some species and the fact that most of these species have been mostly recorded as empty shells washed ashore, many species were described in the past centuries; however, only five species of *Janthina* and two species of *Recluzia* are currently recognized (Beu 2017). In terms of abundance, *Janthina* species are much more common than *Recluzia* species; they can be found in most temperate to tropical waters, while the two species of *Recluzia* are mostly found in the tropical Indo-West Pacific Province (Beu, 2017). Both genera can be easily differentiated by their shells: *Janthina* has striking violet to purple shells, while *Recluzia* is represented by shells of whitish to brownish color.

In the southeastern Pacific off Chile, four extant *Janthina* species are currently known (Table 1): *Janthina exigua* Lamarck, 1816 recorded at Atacama, northern Chile, at Boca Sur, Concepción, and at Hueicolla, Valdivia in southern Chile (Valdovinos 1987), and from latitudes 45 to 55 as *Janthina courcelli* Mabilie & Rochebrune 1891 (Valdovinos, 1999); *Janthina globosa* Swainson, 1822 recorded only at Papudo, central Chile (Ramírez 1980); *Janthina janthina* (Linnaeus, 1758) cited from Easter Island and from Caldera, northern Chile (Rehder 1980, Araya & Aliaga 2021); and *Janthina*

umbilicata d'Orbigny, 1841 recorded only at Easter Island (Osorio 2018). In contrast, the only *Recluzia* species which has been previously recorded in Chilean waters is *Recluzia lutea* Bennett, 1849, at Easter Island (Rehder 1980, Osorio 2018). In this work, we present the first record of *Janthina janthina* in San Félix Island based on three shells washed ashore and the first record of *Recluzia lutea* in the Juan Fernández Archipelago, based on a beached shell collected at the Robinson Crusoe Island.

Family Epitoniidae Berry, 1910

Janthina janthina (Linnaeus, 1758)

(Figs. 1A-D)

MATERIAL EXAMINED: Three specimens collected at a beach in San Felix Island, part of the Desventuradas Archipelago, off northern Chile. Collected by M. Bahamondes, November 7, 1960 (MZUC-UCCC-46952).

DESCRIPTION OF EXAMINED SPECIMENS: Purple to pale violet shells with a low spire, small for the species (up to 9 mm in maximum width), last whorl weakly angled at periphery, sutural ramp and base slightly inflated. Sculpture of fine, low, irregular spiral lines crossed by many irregular axial fine ribs and weak growth lines; the axial ribs are more evident in the first whorl towards protoconch. Protoconch in an angle to the teleoconch whorls, small, smooth to the naked eye. Aperture D-shaped, sinus not evident, lip simple, columella almost straight, of purple color. Shells are purple-colored in the periphery of the shell, particularly in the base of the last whorl, and pale violet in the spire and around the center of the base.

TABLE 1. Distribution of *Janthina* and *Recluzia* species following Beu (2017), and their records and references in Chile. / Distribución de especies de *Janthina* y *Recluzia* siguiendo a Beu (2017), y sus registros y referencias en Chile.

Species	Distribution	Records in Chile	References
<i>Janthina exigua</i> Lamarck, 1816	Widespread in Atlantic, Indian, and Pacific Oceans	Atacama, Concepción, Valdivia 45° S-55° S	Valdovinos, 1987 Valdovinos 1999
<i>Janthina globosa</i> Swainson, 1822	Widespread, but most records from Pacific Ocean	Papudo	Ramírez, 1980
<i>Janthina janthina</i> (Linnaeus, 1758)	Widespread, from tropical to cool-temperate seas	Easter Island Caldera San Félix Island	Rehder, 1980 Araya & Aliaga, 2021 This work
<i>Janthina umbilicata</i> d'Orbigny, 1841	Pacific Ocean, from eastern Australia to the NE Pacific coasts	Easter Island	Rehder, 1980
<i>Recluzia lutea</i> Bennett, 1849	Widespread, most notably in tropical and temperate seas	Easter Island Juan Fernandez Archipelago	Rehder, 1980 This work

DISTRIBUTION: *Janthina janthina* is the most common and widespread species of *Janthina*, being found in most temperate to tropical waters around the world (Beu, 2017). In the southeastern Pacific, it has been recorded from Ecuador down to Peru and Chile (Finet 1991, Ramirez *et al.* 2003, Osorio 2018), although it has been only recently cited from the continental coasts of Chile (Araya & Aliaga 2021), being first recorded in the country at the remote Easter Island (Osorio, 2018).

REMARKS: The three specimens are very small 9.8 x 8.3 x 7.0 mm, 9.5 x 7.5 x 6.7 mm, 11.6 x 9.8 x 7.7 mm (W, W, H) and were apparently collected alive, as there are dried soft parts remaining inside the shells. San Felix island is a very remote island with a coast of mostly cliffs overhanging the sea and few accessible beaches.

***Recluzia lutea* (Bennett, 1840)**

(Figs. 1E-I)

MATERIAL EXAMINED: One specimen collected beached at Robinson Crusoe Island, Juan Fernández Archipelago, off central Chile (MZUC-UCCC-46953).

DESCRIPTION OF EXAMINED SPECIMEN: White shell with a tall spire, small for the species (up to 19 mm in maximum height), sutural ramp inflated. Shell is almost smooth except for the sculpture of a few irregular spiral lines, more evident towards the periphery of whorls. Whorls round, inflated; suture deeply impressed. Protoconch and first whorls eroded. Aperture ovate elongated, lip simple, columella evenly curved, thick, of white color.

DISTRIBUTION: *Recluzia lutea* (Bennett, 1840) is the most common of the two recognized extant species of *Recluzia*,

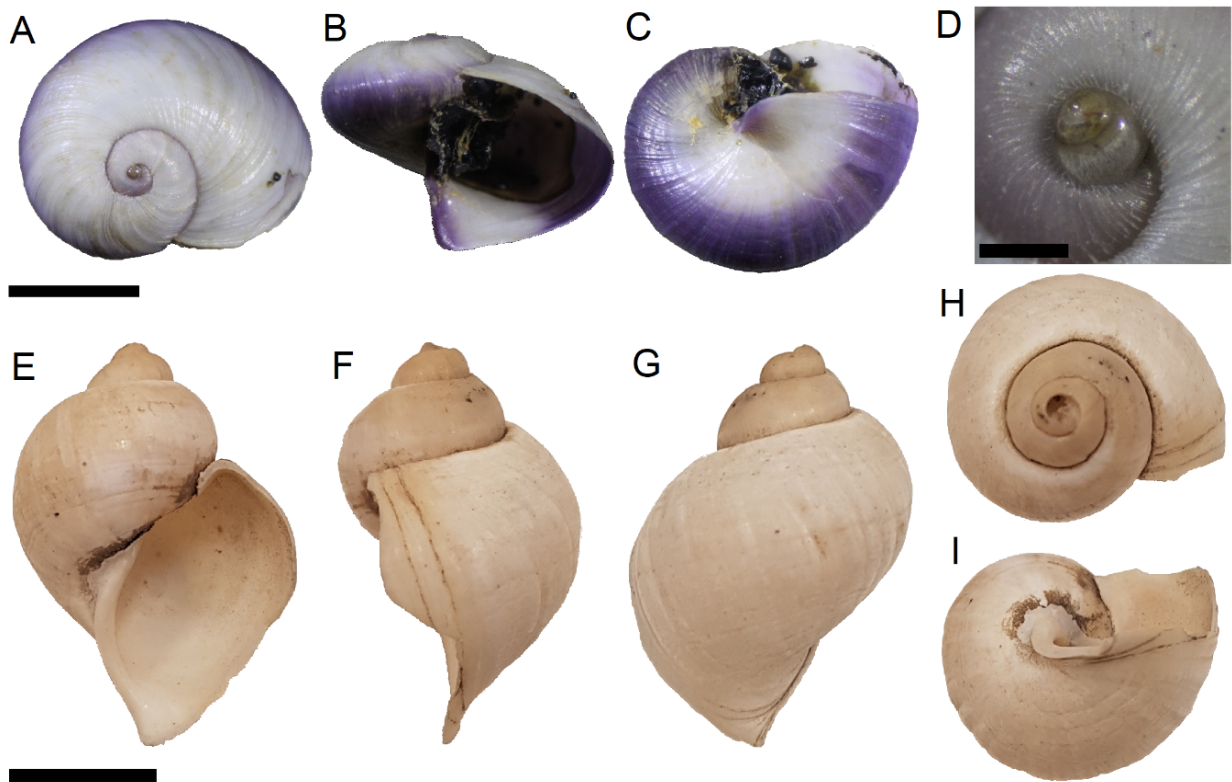


FIGURE 1. *Janthina janthina* (Linnaeus, 1758) MZUC-UCCC-46952, from San Félix Island, Desventuradas Islands, off northern Chile: A) apical view; B) apertural view; C) adapical view; D) detail of protoconch and first whorls. *Recluzia lutea* (Bennett, 1840) MZUC-UCCC-46953, from Robinson Crusoe Island, Archipiélago de Juan Fernández, off central Chile: E) apertural view; F) outer lip side view; G) abapertural view; H) apical view; I) adapical view. Scale bar is 5 mm for A-C, 1 mm for D, and 10 mm for E-I. / *Janthina janthina* (Linnaeus, 1758) MZUC-UCCC-46952, de Isla San Félix, Islas Desventuradas, frente al norte de Chile: A) vista apical; B) vista apertural; C) vista adapical; D) detalle de protoconcha y primeras vueltas. *Recluzia lutea* (Bennett, 1840) MZUC-UCCC-46953, de Isla Robinson Crusoe, Archipiélago de Juan Fernández, frente a Chile central: E) vista apertural; F) vista lateral de labio externo; G) vista abapertural; H) vista apical; I) vista adapical. Barra de escala es 5 mm para A-C, 1 mm para D, y 10 mm para E-I.

being known from scattered records from the Indo-West Pacific to the Eastern Pacific (Beu, 2017). In the southeastern Pacific, this species has been recorded from the Galapagos Archipelago off Ecuador and in Chile only at Easter Island, in the extreme eastern part of Polynesia (Osorio, 2018). The present specimen is the most easterly record for the species, extending its distribution in about 3000 km from its previous record at Easter Island.

REMARKS: The single specimen is comparatively small for the species: 19.2 x 19.3 x 12.0 mm (W, W, H); it is in relatively bad shape, lacking the protoconch and first whorls, and was apparently collected as an empty shell. The specimen, however, is clearly identifiable as *R. lutea*, as the only other *Recluzia* species, *R. johnii* (Holten, 1802), has a much taller and narrower shell with less inflated whorls. *Recluzia johnii* is, however, restricted to the tropical Indo-West Pacific province up to eastern Australia, with no records from the eastern Pacific (Beu, 2017).

Janthina species are quite distinctive snails due to their violet or purple shells, and they can be easily distinguished from any other snails found in the southeastern Pacific. The scarce record for these species probably arises from the few studies done on pelagic organisms in the area. The hydroid *Physalia physalis*, which is a prey of *Janthina* species, has been abundantly recorded along the coasts of Chile (Fierro *et al.* 2021; Araya & Aliaga 2018). However, there are no records of *Janthina* snails being found together with stranded *P. physalis* colonies in the area (or with *Veleva veleva*, another hydroid that has been cited before for southeastern Pacific coasts from Ecuador to Chile), and thus their association in the area remains unclear. *Recluzia* snails are, on the other hand, a much rarer species, and although they have been recorded from an ample geographic range in the southeastern Pacific, they have only been recorded at Easter Island, with no records in the continental coasts of Chile or Perú (Valdovinos 1999, Ramirez *et al.* 2003). It is probable that this *Recluzia* species, as the related *Janthina* species, have a more ample distribution than is currently known in offshore waters in the southeastern Pacific. Further sampling in the Juan Fernández Archipelago and the Desventuradas Islands is essential to document the interesting biodiversity of the area, which has

many relationships with New Zealand and Polynesia, and it may reveal new records for the molluscan and invertebrate fauna of the islands.

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