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## NEW RECORDINGS OF OPISTHOBRANCH MOLLUSKS (MOLLUSCA: OPISTHOBRANCHIA) IN THE SLOVENIAN PORTION OF THE ADRIATIC SEA

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### ABSTRACT

*Four opisthobranch species have been recorded in Slovenian coastal waters for the very first time: Tyrodina perversa, Janolus cristatus, Eubranthus tricolor and Dicata odhneri. The first three were to some extent expected. D. odhneri was found on two occasions, representing new data on this rather rare and less known nudibranch species. The total number of recorded opisthobranch gastropod species is now 70.*

**Key words:** Gastropoda, Opisthobranchia, new records, Slovenia, northern Adriatic

## NUOVE SEGNALAZIONI DI MOLLUSCHI OPISTOBRANCHI (MOLLUSCA: OPISTHOBRANCHIA) NELLA PARTE SLOVENA DEL MARE ADRIATICO

### SINTESI

*Quattro specie di molluschi opistobranchi sono state segnalate per la prima volta per le acque costiere della Slovenia: Tyrodina perversa, Janolus cristatus, Eubranthus tricolor e Dicata odhneri. La presenza delle prime tre specie era in qualche modo prevista. La quarta specie, D. odhneri, piuttosto rara e poco conosciuta, è stata trovata in sole due occasioni. Il numero totale di specie di gasteropodi opistobranchi rinvenute nell'area sale così a 70.*

**Parole chiave:** Gastropoda, Opisthobranchia, nuove segnalazioni, Slovenia, Adriatico settentrionale

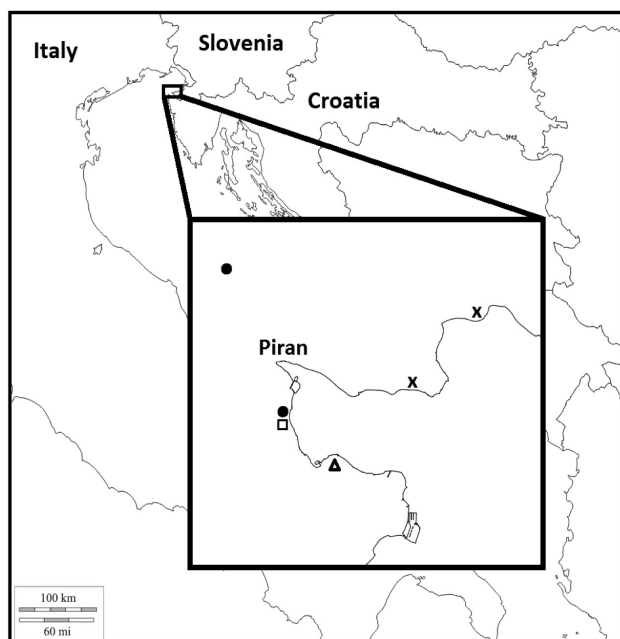
## INTRODUCTION

Over course of the recent decade, some scientific papers were published concerning opisthobranch mollusc species in the marine waters off Slovenia's coast. The most comprehensive work was published by Turk (2000), who listed the species of Opisthobranchia from the Adriatic Sea with particular focus on the portion controlled by Slovenia. He found 23 opisthobranch species in Slovenian waters. Later the same author (Turk, 2005) published a paper on a rare and less known *Cummannotus beaumonti* in the Punta Madona protected marine area in the waters off Piran. In 2008, Lipej and colleagues (Lipej *et al.*, 2008) presented a checklist based on significant new data, complementing the checklist of Turk (2000).

During an ongoing research of cryptobenthic microhabitats in the Slovenian sea, certain opisthobranch mollusks that have apparently not been recorded in the area were sighted and photographed. The aim of this paper is therefore to present records of four as yet undocumented species in the Slovenian waters of the Gulf of Trieste.

## MATERIAL AND METHODS

The four opisthobranch species were recorded at linear transects by means of occasional samplings in determined localities of the Slovenian coastal sea. Special



**Fig. 1: Localities where opisthobranchs were found in the Slovenian sea:** ● – *Eubranchus tricolor*, ▲ - *Janolus cristatus*, □ – *Tyrodina perversa*, x – *Dicata odhneri*.

**Sl. 1: Lokalitete, na katerih so bili najdeni zaškrgarji v slovenskem morju:** ● – *Eubranchus tricolor*, ▲ - *Janolus cristatus*, □ – *Tyrodina perversa*, x – *Dicata odhneri*.

attention was given to particular habitats and microhabitats where the specimens were recorded. All specimens were photographed and subsequently identified with the aid of identification keys and monographs such as Barletta (1980), Schmekel & Portmann (1982) and Trainito (2005).

## RESULTS AND DISCUSSION

## NOTASPIDEA

## Family Tylodinidae

*Tyrodina perversa* (Gmelin, 1791)

A specimen of *T. perversa* was found in the locality of Piranček at the entrance to the town of Piran at the depth of 7.8 m on 8<sup>th</sup> July 2012 (Figs. 1, 2d). The specimen was recorded in the muddy habitat occurring at the edge of the rocky seabed. The species was easily recognized due to its typical umbrella-like shell. Its known distribution is in the Mediterranean Sea and northeast Atlantic Ocean at least as far as the British Isles. *T. perversa* feeds on the *Aplysina aerophoba* sponge. However, according to Becerro *et al.* (2003) the slug could also possibly feed also on the cyanobacteria that are present in high concentrations in the ectosome of the sponge. They found that the slugs actively choose sponges with a high concentration of cyanobacteria.

## NUDIBRANCHIA

## Family Proctonotidae

*Janolus cristatus* (Delle Chiaje, 1841)

One specimen of *Janolus cristatus* was found at a depth of 9 m at 30 June 2012 on the remains of an old car close to the tourist resort Bernardin (Figs. 1, 2c). The prevalent habitat type in the area is mud. Turk (2000) mentioned this species for the locality of Selca in Kvarner region, but otherwise it has been recorded from the Mediterranean to Norway. It is known to feed on erect bryozoans, especially *Bugula* and *Cellaria* species (Pitton & Morrow, 2010).

## Family Eubranchidae

*Eubranchus tricolor* Forbes, 1838

A specimen of *E. tricolor* was found on a sandy environment under the oceanographic buoy Vida on 16<sup>th</sup> March 2012 in waters off Piran. Two specimens were recorded on 23<sup>rd</sup> March 2012 at the locality of Piranček in the precoralligenous habitat at 8 m (Figs. 1, 2a), and another one at the same location at a depth of 6 m. Turk (2000) found this species in the Kvarner region, close to the town of Sv. Juraj. *E. tricolor* is a boreal species, preferring lower temperatures and is known in the North-East Atlantic Ocean, from the Arctic to France. It is known to graze on both calyptoblastic and gymnoblastic hydroids and according to Rivers & Harris (1976) the preferred prey are species of the genus *Tubularia*.

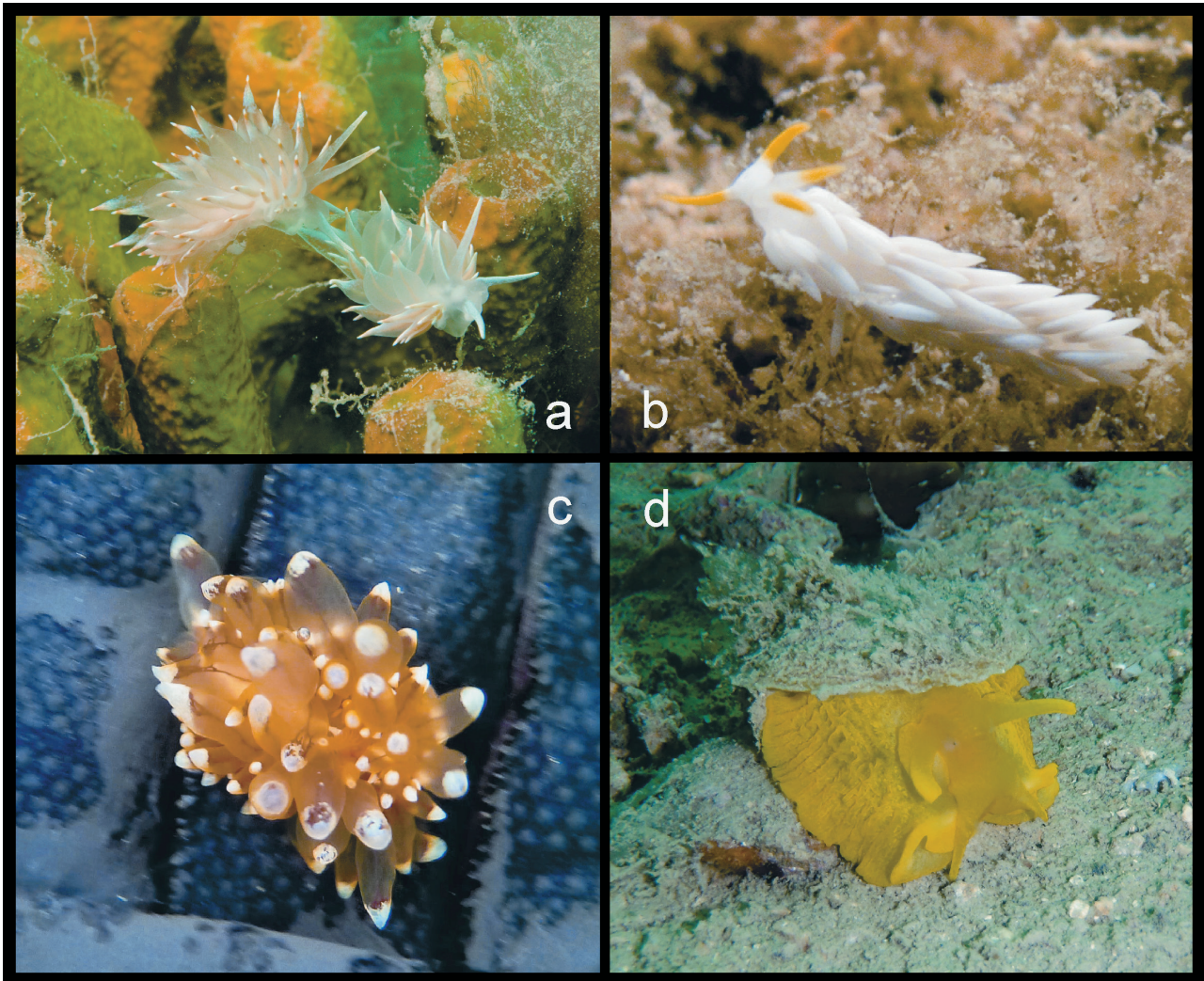


Fig. 2/SI. 2: (a) *E. tricolor*, (b) *D. odhneri*, (c) *J. cristatus*, (d) *T. perversa*. (Photo/Foto: B. Mavrič: 2a, 2b, 2d; S. Moškon: 2c)

#### Family Favorinidae

##### *Dicata odhneri* Schmekel, 1967

The first specimen of *Dicata odhneri* was found on algal turf at the locality of Salinera on 4<sup>th</sup> September 2009 at a depth of 3m. The second specimen was found at the locality of Mesečev zaliv on 12<sup>th</sup> July 2010 at 3.5 m (Figs. 1, 2b) in the biocoenosis of photophilic algae. The species is determined by its typical white colour and yellow rhinophores.

#### Opisthobranch fauna of Slovenia

Altogether, with the four new recorded seaslugs the checklist of opisthobranch fauna of Slovenia is enlarged to 70 species. Three of them were expected since they have previously been found in other parts of the Mediterranean Sea while *D. odhneri* has since its description

in 1967 only been found in a few areas such as Gulf of Naples and in Atlantic waters of Baleal in Portugal (Silva, 2005) and Ireland (Picton & Morrow, 2010). However, since there are some additional unpublished records in other areas, the species is probably less rare than it appears to be.

Knowledge of the opisthobranch fauna of the Slovenian coastal sea will be certainly enlarged in the future. In fact, better inspection of the sampling area using new approaches together with the increased research effort could contribute to additional new findings for the area. The species list could be also enlarged by the arrival of southern thermophilous species and non-indigenous seaslugs.

## NOVI PODATKI O POLŽIH ZAŠKRGARJIH (MOLLUSCA: OPISTHBRANCHIA) V SLOVENSKEM DELU JADRANSKEGA MORJA

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## POVZETEK

Avtorji poročajo o štirih vrstah polžev zaškrjarjev (*Opisthobranchia*), ki so bili prvič najdeni v slovenskem morju. To so: *Tyrodina perversa*, *Janolus cristatus*, *Eubranthus tricolor* in *Dicata odhneri*. Prve tri vrste so bile pričakovane, saj so bile potrjene v drugih bližnjih predelih. Vrsta *D. odhneri* je bila doslej najdena le na manjšem številu lokalitet, zato sta dva zapisa o pojavljanju te vrste v slovenskem morju nov doprinos k poznavanju te redke in manj znane vrste. Skupaj z novimi vrstami je sedaj število ugotovljenih vrst polžev zaškrjarjev v favni Slovenije 70.

**Ključne besede:** Gastropoda, Opisthobranchia, novi podatki, Slovenija, severni Jadran

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