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## UNUSUAL SEA SLUG FROM CAPE MADONA (PIRAN, SLOVENIA) – THE FIRST RECORD OF *CUMANOTUS BEAUMONTI* (ELIOT, 1906) IN THE MEDITERRANEAN SEA

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### ABSTRACT

*Two specimens of an unusual nudibranch were found during the winter scuba dive off Cape Madona, Piran, northern Adriatic Sea. The specimens were identified as Cumanotus beaumonti (Eliot, 1906) (Nudibranchia, Aeolidioidea, Cumanotidae). To the best of our knowledge, it is the first record of this rare species in the Mediterranean Sea.*

**Key words:** *Cumanotus beaumonti*, first record, Gulf of Trieste, Mediterranean Sea

## NUDIBRANCO INUSUALE A PUNTA MADONNA (PIRANO, SLOVENIA) – PRIMA SEGNALAZIONE DI *CUMANOTUS BEAUMONTI* (ELIOT, 1906) IN MARE MEDITERRANEO

### SINTESI

*Due individui di un'insolita specie di nudibranco sono stati trovati durante un'immersione invernale al largo di Punta Madonna, Pirano, Adriatico settentrionale. Gli esemplari sono risultati appartenenti alla specie Cumanotus beaumonti (Eliot, 1906) (Nudibranchia, Aeolidioidea, Cumanotidae). Secondo le conoscenze dell'autore, si tratta della prima segnalazione di questa rara specie nel mare Mediterraneo.*

**Parole chiave:** *Cumanotus beaumonti*, prima segnalazione, Golfo di Trieste, mare Mediterraneo

## INTRODUCTION

Only few records of nudibranchs belonging to the genus *Cumanotus* are known so far. Three species are currently described: *Cumanotus cuenoti*, Pruvot-Fol, 1948 from the Atlantic coast of Southern France (Archachon basin) and *Cumanotus beaumonti* from only few localities in the Northern Atlantic along the western coasts of British Isles and Norway (Picton & Morrow, 1994). The third species, *Cumanotus fernaldi* Thompson & Brown, 1984, is known from the Northern Pacific along the coasts of US and Canada. The taxonomic status of the latter is not entirely clear and may actually be only a synonym for *C. beaumonti*. None of the described species had been previously recorded in the Mediterranean.

While *C. cuenoti* is a small species not exceeding the overall length of 1 cm, *C. beaumonti* can reach up to 3 cm in length. It is difficult to say whether the two species are distinct, as our knowledge of each is based on only very few specimens. Thompson & Brown (1984) note that *C. cuenoti* appears to be smaller, not exceeding 10 mm in length, lacking oral and propodial tentacles, and having fewer denticles on the radular teeth. The detailed description of *C. beaumonti* and its spawn based on 15 specimens collected along the coast of Northern Ireland is given in the paper of Picton (1991). According to his description, *C. beaumonti* has short but nevertheless clearly visible oral tentacles. Both species appeared to be specialists in terms of their diet. *C. cuenoti* feeds on hydroids *Tubularia* spp. and *Ectopleura dumortieri* (Tardy & Gantes, 1980), *C. beaumonti* on large athecate solitary hydroids of *Corymorpha nutans* (Picton & Morrow, 1994). *C. fernaldi* probably feeds on different *Tubularia* species. We lack any data about the life cycle and reproduction of these sea slugs.



**Fig. 1/Sl. 1:** *Cumanotus beaumonti* (Eliot, 1906). (Photo/Foto: B: Furlan)

## MATERIAL AND METHODS

The nudibranchs were found during the routine dive in early April 2005 (2<sup>nd</sup> April). Although this is early springtime, the diving conditions were wintry. Scuba tanks filled with air and winter drysuits were used. The nudibranch specimens were photographed with Nikon F5, equipped with 105/2.8 AF Micro-Nikkor lens (Nikon Corp. INC., Japan) accommodated in a Seacam underwater housing (Seacam, Austria). A 200 W/s underwater strobe (Seafash 200 TTL, Seacam Austria) was used to illuminate the subjects. The water temperature was 8 °C (recorded with diving thermometer), while the depth where the nudibranchs were found was 20 m (recorded with Aladin diving computer, Uwatech, Switzerland). Specimens were not collected or preserved; the identification was done solely on visual basis from the obtained pictures.

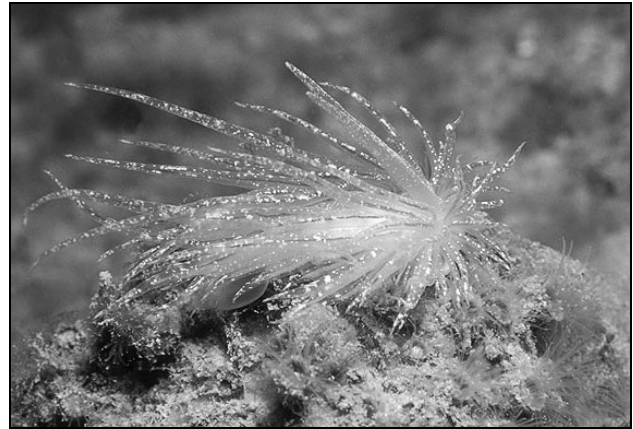
## RESULTS

Two specimens identified as *Cumanotus beaumonti* were found on the muddy bottom at a depth of 20 m (Figs. 1, 2). They were of about equal size, measuring 3 cm in length. At first glance they seemed like small sea anemones embedded in the sand. They were slowly crawling on the bottom surface. In order to get a more contrast picture of the slugs, which actually crawled slowly along the bottom, one of them was picked up and taken to a rock nearby. In contrast to the earlier reports on this species as well as on *Cumanotus cuenoti* (Tardy & Gantes, 1980; Picton, 1991; Picton & Morrow, 1994), the nudibranch was not swimming when it was picked up and released, but rather sank slowly back to the sea bed. According to the visual appearance of the specimens from Piran and another existing picture from the British Isles (Picton & Morrow, 1994), we can give the following description of the animal: the body is broad and translucent with white and gold speckling covering the head, back and cerata. According to Picton & Morrow (1994), the long, slender cerata are arranged in 8 to 12 transverse ridges with 6 to 9 cerata in each ridge. The cerata are broader at the base and gradually tapering towards their ends. The three anterior ceratal ridges are situated in front of the very long, smooth rhinophores, which are clearly visible on the specimens' pictures from Piran. The digestive gland in the cerata ranges from brown to reddish pink. The ceratal wall is translucent clear with gold and white speckling and white tips. The head is broad with distinctive tentacular anterior foot corners. The oral tentacles are short, but distinct. The last two features are not clearly visible on the specimens from Piran, as the long anterior cerata obscure the view of the head, except on the picture of a floating specimen where a short foot corner or short oral tentacle is visible on the low left side of the animal.

## DISCUSSION

The occurrence of *Cumanotus beaumonti* (Eliot, 1906) in the Northern Adriatic came as a big surprise, considering that members of the genus *Cumanotus* had been till then known only from the cold parts of the Atlantic and Pacific Oceans. Even there they are considered to be quite rare and can be only found during the short winter period. The exception was the population of *C. beaumonti* from the coast of Northern Ireland. These specimens were collected in June 1985 (Picton, 1991). Otherwise, *C. beaumonti* is currently known only from three localities along the west coast of Britain and one locality from Norway, where it is considered to be very rare. Our paper reports on the first record of this species in the Mediterranean Sea, suggesting that the species has a much wider geographic distribution than believed so far. The rare finds in the Northern Atlantic may suggest either that the geographic range cantered much further south or a very sporadic appearance of this species. The related, although smaller species *Cumanotus cuenoti* is found only in the Arcachon basin (Southern Atlantic coast of France), but even there it is considered quite rare and its brief appearance is limited to about one winter month, usually February (Poddubetskaia, *pers. comm.*). The same seems to hold true for the Pacific species *Cumanotus fernaldi*, which also appears only in the winter (Millen, *pers. comm.*).

In winter, the Gulf of Trieste, this northernmost part of the Adriatic Sea, is considered the coldest part of Mediterranean. In February or early March, the temperature of the sea water reaches its annual lows of about 8 °C. In exceptionally cold winters (which was the case of the winter 2004/2005) as well as frequent and strong bora winds blowing in this region, the water temperature may be even a few degrees lower and does not warm up substantially till mid April. These are conditions that meet the needs of boreal species to survive for a brief period of the year. However, the Gulf of Trieste becomes one of the warmest parts of the Mediterranean during the summer, when annual temperature peaks can easily exceed 25 °C. Since the Gulf of Trieste is very shallow (the maximum depth is only about 25 metres, disregarding a couple of deeper areas), the temperatures at the bottom differs from surface temperatures by only few degrees centigrade. Such conditions do not guarantee the survival of boreal species and cannot be compared with the temperature of deep oceanic waters of the Northern Atlantic or Pacific, where seasonal fluctuations of water temperature are much smaller. Therefore, the survival of a boreal species such as *C. beaumonti* in temperature extremes present during the year in the Gulf of Trieste is puzzling. Picton (1991) suggests that *C.*



**Fig. 2/Sl. 2:** *Cumanotus beaumonti* (Eliot, 1906). (Photo/Foto: B: Furlan)

*beaumonti* is able to burry into the soft bottom, and this might be the way to survive the warmer part of the year.

Another reason for the sudden appearance of *C. beaumonti* in the Northern Adriatic may be the availability of its preferred diet, which is supposed to be large athecate solitary hydroids of *Corymorpha nutans* (Picton & Morrow, 1994). These animals were present in large numbers during the past winter and early spring. However, the appearance of *C. nutans* is sporadic (*personal observations*). There are years, when not a single animal could be found. The abundance of preferred food for *C. beaumonti* might therefore be the reason for the existence of this species in our waters. Picton (1991) speculates that *C. beaumonti* is able to swim or drift in the ocean currents and follow its prey – the medusae of *C. nutans* – to new locations. We were not able to confirm the two specimens' swimming abilities during their observations in the Northern Adriatic.

Finally, we should also consider that *C. beaumonti* might not be so rare in our waters, but that the lack of more records is simply due to the fact that not many people are diving in harsh winter conditions, which are obviously favourable for *C. beaumonti*. It is also possible that due to its coloration and overall appearance the slug could be easily overlooked or simply mismatched for a small sea anemone.

## ACKNOWLEDGEMENT

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NENAVADNO ODKRITJE MORSKEGA POLŽA OB RTU MADONA PRI PIRANU –  
PRVI PODATEK O VRSTI *CUMANOTUS BEAUMONTI* (ELIOT, 1906)  
V SREDOZEMSKEM MORJU

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POVZETEK

Avtor poroča o odkritju dveh primerkov nenavadnega gološkrjarja med potopom ob Rtu Madona pri Piranu. Ugotovljeno je bilo, da gre za vrsto *Cumanotus beaumonti* (Eliot, 1906) (*Nudibranchia*, *Aeolidioidea*, *Cumanotidae*) in – glede na obstoječe podatke – tudi za prvo odkritje te redke vrste v Sredozemskem morju.

**Ključne besede:** *Cumanotus beaumonti*, prvi podatek, Tržaški zaliv, Sredozemsko morje

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