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Acetabularia caliculus (J.V.Lamouroux, Quoi & Gaimard, 1824), di Teluk Antalya: Penemuan kedua

Acetabularia caliculus (J.V.Lamouroux, Quoi & Gaimard, 1824), in the Gulf of Antalya: A second discovery

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Abstract

During scuba-diving activities on October 26, 2021, at Konyaalti Beach (36° 52' 58'' N 30° 41' 06'' E) of the Gulf of Antalya, another *Acetabularia* species was discovered after the vegetation of *Acetabularia acetabulum*. According to the species guide, this algae species was identified as *Acetabularia caliculus* (JVLamour, Quoy & Gaimard, 1824). This species was first reported in the Gulf of Antalya in 2018. This study presents a second discovery of the species in the Gulf of Antalya.

Keywords: Acetabularia caliculus; Gulf of Antalya; Second Report

1. Introduction

Acetabularia acetabulum or the mermaid's wine glass ((https://www.subdiversion.es/en/species/algae/chlorophytes /acetabularia-acetabulum) is a native umbrella-shaped light green algae in the Mediterranean Sea. It lives in a rocky and a stony area in the slow-current waters and coastal waters of the Mediterranean Sea. This species is frequently observed in the Gulf of Antalya at spring (April-May) and completes its vegetation in the early summer period (June-July). *Acetabularia caliculus* (J.V. Lamour, Quoy & Gaimard, 1824), a highly similar type to this species, spreads in tropical and subtropical regions. Both species belong to the genus *Acetabularia* and the family Polyphysaceae. *Acetabularia* is among the largest unicellular organisms with large nucleus (Shihira-Ishikawa, 1984). Some *Acetabularia* species are used as an important cellular model for cell biology and molecular biology research (Puiseux-Dao, 1970; Bonotto et al., 1976). *A. caliculus* can retain mercury from seawater and accumulate metals in the tissues' polypeptides (Garcia and Reyes, 1996).

In a slender, slightly calcified *A. caliculus*, the thallus forms 2.0-4.5 cm long cylindrical peduncle groups. Peduncles are slightly tuberous, unbranched, and whitish due to calcification. It usually grows on pebble stones, calcareous algae, mollusk shells, rock fragments, or coral remains such as *Millepora* L. in shallow waters (Moura et al., 2014). *A. caliculus* is generally spotted along the Atlantic and Indo-Pacific coasts, that was initially identified in the Western Australia. This species was firstly discovered in Spain, Egypt, Israel, Morocco, and Greece as parts of the Mediterranian Sea (Rayss, 1955; Cormaci et al., 2004; Yokeş et al., 2018).

A different *Acetabularia* species was discovered during our scuba-diving at Konyaalti Beach in the Gulf of Antalya. It has a smaller umbrella diameter than *A. acetabulum*, and the calcification structure of this species is less obvious. This study aimed to identify this different species, thus can be included in the algal flora list of the Gulf of Antalya.

2. Materials and Method

A different *Acetabularia* species was discovered during the scuba-diving at Konyaalti Beach on October 26, 2021. This algae species was detected at 7-8 m depth (36° 52' 58'' N 30° 41' 06'' E coordinate, Figure 1). Samples were collected and brought to the laboratory, Faculty of Fisheries, Akdeniz University. Identification was carried out according to Moura et al. (2013). The general features of the samples were documented using a digital camera (*Canon Power Shot G12 Digital camera* and *wp-dc34+hausing*).

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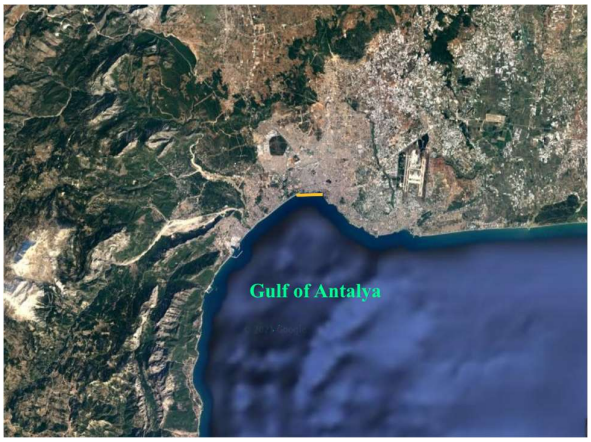

Figure 1. Discovery area.

3. Results and Discussion

This new slender algae species found on the pebble stones at 7-8 m depth in the Gulf of Antalya was identified as *Acetabularia caliculus* (Figure 2). The thallus of the species is 2.0-4.5 cm long, the peduncles are unbranched and slightly calcified. The cylindrical peduncle groups have a terminal disc. The lower corona consists of rectangular parts. The cap, usually with 30 rays, has 5-7 mm diameter. The upper corona with the elongated segments bore 3-4) linearly-arranged sterile hairs (Figure 2).

Yokes et al. (2018) detected this species in clusters on dead snail shells (*Callista chione*) at 4 m depth in the Gulf of Thermaikos. Okudan (2018) reported, that the species covers 5-10% of the rocky bottom layer in the littoral region up to 18-20 m depth at the Gulf of Antalya shores (Levantine Sea). In our study, *A. caliculus* was detected in clusters on pebble stones at 7-8 m depth of Konyaalti beach (Gulf of Antalya).

Figure 2. *A. caliculus* in the Gulf of Antalya.

A. acetabulum is a native green macroalgae in the Mediterranean Sea. Although *A. acetabulum* and *A. caliculus* are highly similar, *A. acetabulum* has wider, thicker, and harder umbrella with thicker thallus and lighter green color than *A. caliculus*. The *A. caliculus* umbrella has lighter green color with longer thallus, following the umbrella diameter.

In the Mediterranean climate, temperate or cold-sea species such as *Bangia, Nemalion, Ulothrix* are frequently spotted in the winter, while warm-sea species, such as *Acetabularia, Anadyomene, Halimeda*, and *Digenea* are encountered in summer (Güner and Aysel, 1977; Aktar and Cebe, 2010). In the Gulf of Antalya, *A. acetabulum* completes its vegetation on June-July (based on a personal interview with Prof. Mehmet Gökoğlu, Ph.D., a scuba diver and a marine biologist). Based on the findings, the *A. caliculus* continues its vegetation period on October. Therefore, these findings are evaluated further as another difference between the two species.

In conclusion, *A. caliculus* was reported from the Gulf of Antalya for the second time in this study. The vegetation of this species lasts longer than *A. acetabulum*.

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