



First record of *Viminella* sp. (Anthozoa: Alcyonacea: Ellisellidae) in the Persian Gulf

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Abstract

This paper presents the first record of *Viminella* Gray 1870 from the Persian Gulf. This genus has a global distribution and its largest distribution is in the Indo-Pacific region. A single specimen was collected by a local fisherman from south Hengam Island (the north Persian Gulf) from 60-70 m depth. Colony morphology characteristics were examined by stereomicroscope and optical microscope. Descriptions of the colony and other taxonomic characteristics are provided. The colony is unbranched with a height of 12 cm and its basal diameter is approximately 1.63 mm. The sclerites of the coenenchyme comprise a variety of symmetrical double heads and capstan-like forms (0.05-0.11 mm). In the wall of calyces, slightly elongated double heads, capstans and spindles (about 0.08-0.19 mm) are present. Our finding extends the known geographical distribution of this genus in the Indo-Pacific region to the Persian Gulf.

Keywords

Octocorallia, gorgonian, Sclerite, Hengam Island, Iranian waters

Introduction

Octocorals (Octocorallia: Alcyonacea: Alcyoniina) are globally distributed and are important elements of coral reef ecosystems, especially in the Indo-Pacific region. There are 35 genera of octocorals which are distributed over 15% of the region (Fabricius and De'ath 2000; Fabricius and Alderslade 2001; Chanmethakul et al. 2010). In the last decade, knowledge of the taxonomy of octocorals, especially from shallow tropical reefs in the Indo-Pacific region, has increased (Chanmethakul et al. 2010).

The Persian Gulf is one of the most important marine basins adjacent to the Indo-Pacific region and is distinguished by its unique biodiversity. As a marginal, shallow, semi-closed sea, it has immense economic and ecological value. The length of the Gulf is 990 km with a maximum recorded width of 240 km and the surface area is approximately 239,000 square km. Its mean depth is close to 36 m and, in some areas can be as deep as 100 m (Reynolds 1993). Thomson and Simpson (1909) were the first to study the taxonomy of octocorals in the Persian Gulf, reporting five species occurring in the region, *Solenocaulon tortuosum* (Gray, 1862), *Echinogorgia ramulosa* Gray, 1870, *Versluysia ramosa* (Thomson & Henderson, 1905), *Parisia fruticosa* Verrill, 1864 and a new species *Nicella reticulata* (a species currently in *Verrucella*). Recently Namin and Ofwegen (2009) identified 31 species from the Iranian coasts.

The genus *Viminella* (Octocorallia: Ellisellidae) was established by Gray (1870). It is a flagelliform gorgonian, characterised by unbranched colonies up to 2 m in height (Fabricius and Alderslade 2001; Williams and Chen 2011) and rarely with one or a few branches (Bayer and Grasshoff 1994; Fabricius and Alderslade 2001). Its colony colour is variable and can be red, orange, yellow, white, pink or bicoloured with red polyps or red with white polyps (Fabricius and Alderslade 2001; Williams and Chen 2011). This genus is widespread with a circumglobal distribution in the Indo-Pacific, Atlantic and Mediterranean Sea (Grasshoff 2000; Fabricius and Alderslade 2001; Kumar et al. 2014; Williams and Chen 2011). Fifteen species are known in this genus (Williams and Chen 2011). So far, *Viminella* has not been reported from the Persian Gulf.

Materials and methods

A colony of this specimen was collected by a local fisherman (with Gill net) from the north Persian Gulf area near Hengam Island (26°36'42.6"N 55°51'46.3"E) from 60-70 m depth (Fig. 1). The specimen was identified using morphological characteristics of the colony and sclerites. Sclerites were extracted using 5% sodium hypochlorite and examined under stereomicroscope and light microscope. The latest related references were used to identify this species (Bayer and Grasshoff 1994; Grasshoff 2000; Fabricius and Alderslade 2001; Kumar et al. 2014; Williams and Chen 2011). The colony, preserved in 75% ethanol, was deposited in the Khoramshahr University of Marine Science and Technology (KMSU).

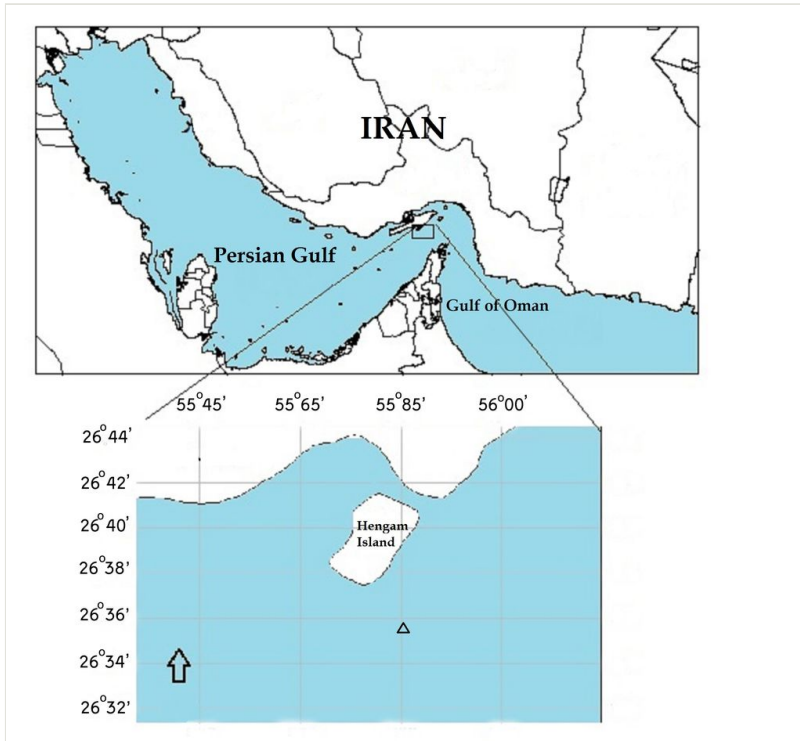


Figure 1. [doi](#)

Sample collection site in the south coastal waters of the Hengam Island by local fishermen.

Results and Discussion

Order Alcyonacea Lamouroux, 1812

Suborder Calcaxonina Grasshoff, 1999

Family Ellisellidae Gray, 1859

Genus *Viminella* Gray, 1870

Viminella sp.

Description

One colony of *Viminella* sp., found at a depth between 60 and 70 m, was examined. Colony unbranched with a height of 12 cm; basal diameter approximately 1.63 mm. Branch covered by monomorphic polyps. Polyps contract into conspicuous mound-like calyces (Fig. 2). Length of calyces about 0.45 mm. Sclerites symmetrical double heads and spindles (Fig. 3), light brown and highly tuberculated. Sclerites of coenenchyme a variety of

symmetrical double heads and capstan-like forms (0.05-0.11 mm). In the wall of calyces, slightly elongated double heads, capstans and spindles (0.08-0.19 mm) present.

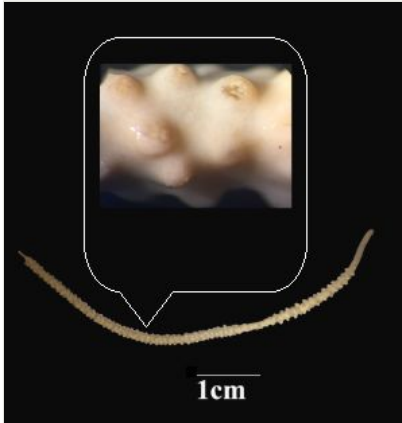


Figure 2. [doi](#)
Wet-preserved specimen of *Viminella* sp. (KMSU).

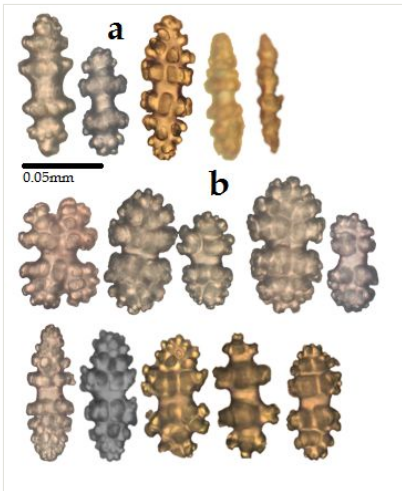


Figure 3. [doi](#)
Sclerites of *Viminella* sp.: a. Polyp; b. Coenenchyme.

The genus *Viminella* occurs in shallow water as well as in deep water regions of the Indo-Pacific (Grasshoff and Bargibant 2001), but so far, it has not been reported from the Persian Gulf. In the Indo-Pacific region, *Viminella* is very similar to some species of *Junceella*. They have the same unbranched colony form but are easily identifiable by an investigation of the sclerites (Fabricius and Alderslade 2001). *Junceella* has non-symmetrical double-headed sclerites while *Viminella* has symmetrical double-headed sclerites.

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Hosting institution

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Ethics and security

Specimens were collected legally. Sample collection was carried out under permission No. 96/3357 on 5 February 2018, from the Department of Environment of Hormozgan Provincial Directorate.

Conflicts of interest

None of the co-authors has any conflicts of interest with this work.

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