



## Description of two new *Discocelis* species (Polycladida: Acotylea: Discocelidae) from the Persian Gulf with a review of the genus

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### Abstract

Two new polyclad species, from northern intertidal zone and shallow rocky shores of the Persian Gulf, *Discocelis persica* **sp. nov.** and *Discocelis hollemani* **sp. nov.**, are described. *D. persica* possesses a thick and broadly oval body tapering somewhat posteriorly, without any obvious color pattern; with marginal eyes extended around the anterior margin of the body; cerebral eyes forming two clusters, each further subdivided into anterior and posterior groups, about 100 eyespots at the anterior group and 55 eyespots at the posterior groups; mouth at the posterior end of the pharynx; male atrium with three to four distinct lobes, with numerous prostatoid organs of two distinct sizes, without villus-like projections; and with a horseshoe-shaped Lang's vesicle. *D. hollemani* characterized by a thick and broadly oval body, not tapering antro-posteriorly, without any obvious color pattern; marginal eyes extended to the vicinity of the posterior end of pharynx; the cerebral eyes forming two clusters, each further subdivided into anterior and posterior groups in relation to the cerebral organ, about 50 eyespots at the anterior group and 20 eyespots at the posterior groups; mouth at the posterior end of the pharynx; the male atrium with two distinct lobes, with numerous prostatoids of two distinct sizes and different contents; villus-like projections absent, and with a horseshoe-shaped Lang's vesicle.

**Key words:** Intertidal zone, Taxonomy, *Discocelis persica*, *D. hollemani*

### Introduction

The Polycladida represents a highly diverse order of free-living marine turbellarian, distributed globally in coastal marine environments. They are generally negatively phototactic and prefer to live inside rock cavities, under rocks and coral rubbles during daylight hours (Newman & Cannon 2003). More than half of polyclad species described, so far, have been found between latitudes 30°N and 30°S and about two-thirds of these have been found in the Indo-Pacific region (Prudhoe 1985).

The Discocelidae Laidlaw, 1903, is a cosmopolitan family belonging to the Acotylea. Members of the family are characterized by numerous prostatoid organs, surrounding the penis and atrial walls (Faubel 1983). The genus *Discocelis* Ehrenberg, 1836, is considered as the largest genus within the family.

Currently, polyclads are, mainly, classified by two different systems, that of Faubel (1983, 1984) and that of Prudhoe (1985). Faubel's system emphasizes on anatomical features of the male organ's complex. In his system the shape, orientation and structure of the prostatic vesicle and its relationship with the ejaculatory duct have a high taxonomic value. Recently, Bulnes (2010) emphasized that these internal characteristics provide a powerful taxonomic tool to describe new species and to re-define and understand the diagnostic structures. Prudhoe (1985) in his classification added some new taxonomic characters to, and corrected some existing characteristics of, the system of Lang (1884).

The Persian Gulf, where the present study has been conducted, is a part of the Western Indo-Pacific. Khalili *et al.* (2009), reported some pseudocerotid polyclads from the Persian Gulf, previously. The present study introduces two new *Discocelis* species from the northern coasts of the Persian Gulf and reviews the genus *Discocelis*.