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## First record of *Dendrodoris atromaculata* (Alder & Hancock, 1864) from West coast of India

**Piyush Vadher and Hitesh Kardani**

### Abstract

Present study reports the first record of nudibranch *Dendrodoris atromaculata* (Alder & Hancock, 1864) from west coast of India. The last known record of this species from the Pulicat Lake of Bay of Bengal, India. The species is rare in the Indian waters. A single specimen was observed in seaweed (*Spatoglossum asperum*) at 0.5-meter depth. Description, Geographic location and Photographs of live specimen are given.

**Keywords:** Nudibranch, *Dendrodoris atromaculata*, first record, Gulf of Kachchh, Gujarat

### Introduction

Nudibranch are brightly coloured marine molluscs. Nudibranchs, meaning “naked gills” consist of soft-bodied sea slugs [1]. Around 3,400 nudibranch species were reported from the Indo-West Pacific regions [2]. Nudibranchs are found in coral reef, tidal pools, seaweeds, sponges, etc. Nudibranch’s important role in marine food chains. Nudibranch is carnivorous, feeding on coral, sponge, tunicate, hydroid, bryozoan, anemone, etc. Many nudibranch secretion of toxic, colour, chemical as a tool for defence [1]. The nudibranch genus *Dendrodoris* was described by Ehrenberg (1831). *Dendrodoris atromaculata* has wide distribution in different parts of Indo-West Pacific Ocean [3] and Bay of Bengal [4]. *Dendrodoris atromaculata* is a found in association with seaweed of lower intertidal areas [4]. *Dendrodoris atromaculata* (Alder & Hancock) was firstly described from the south-east coast of India [5]. In this report, we describe this species for the first time from the west coast of India.

### Materials and Methods

The present study was carried out at Sikka reef (22°26'38.8"N 69°47'50.6"E) in the Gulf of Kachchh, Gujarat. The Sikka reef intertidal area is rocky, sandy and muddy. The exposure of intertidal zone at Sikka is about 3-4 kilometres. The shore is also covered with mangroves, mollusca, seaweeds, sponges, corals, etc. Sikka reef is under great anthropogenic pressure. Various industries have constructed their offshore terminals as well as Reliance Jetty, GSFC Jetty, Gujarat Electricity Board, DCC Jetty, etc. A single live specimen observed (22°26'43.0"N 69°48'25.4"E) by seaweed area (Fig.1), from 0.5-meter depth during February, 2018 and capture photographed in the field for identification. Details observation to reveal their morphological characters and measurements. The size of observed specimens ranged between 55 mm. Present specimen was identified through the literature [4] and through expert communication with Dr. Deepak Apte (Director, Bombay Natural History Society, Bombay-India).

### Results

#### Systematics:

**Phylum:** Mollusca

**Class:** Gastropoda

**Infra class:** Opisthobranchia

**Order:** Nudibranchia

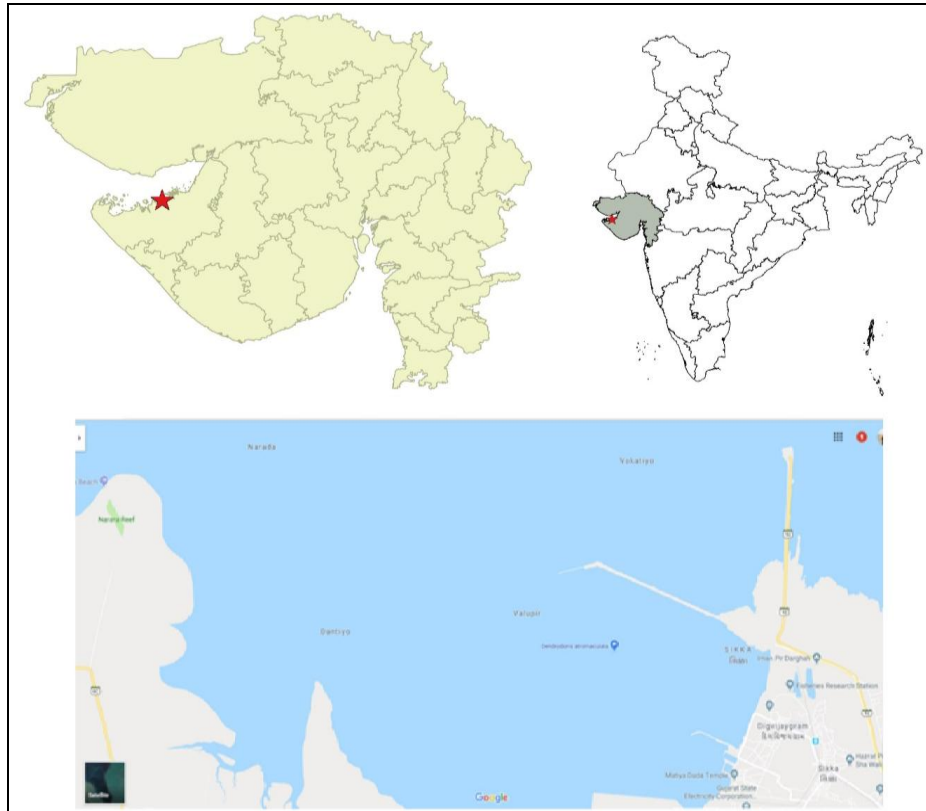
**Family:** Dendrodorididae

**Genus:** *Dendrodoris*

**Species:** *Dendrodoris atromaculata* (Alder & Hancock, 1864)

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**Synonymy***Dendrodoris atromaculata* (Alder & Hancock, 1864)*Dendrodoris singaporensis* (Lim & Chou, 1970)**Fig 1:** Study site Location**Material Examined**

**Diagnosis:** Animal is cream or yellowish colour body and background is orange colour, irregular black patches on dorsal side (mantle) and gills have plumbeous tree like branches which consists four quadripinnate branches arranged at right angle to each other [6]. Dark brown rhinophores present on anterior dorsal side of the animal. It is the only member of the genus known to possess finger like notal papillae, large dense notal spicules and a gill plume that is cross like [3]. (Fig.2)

**Size:** 55 mm.

**Distribution in World:** Singapore, Australia and Fiji. Singapore (Lim & Chou, 1970) [6], Queensland and Western Australia (Willian & Coleman, 1984) [7], (Brodie, 2004) [3] and Fiji (Brodie, 2004) [3].

**Distribution in India:** Tamil Nadu, Andhra Pradesh.

Tamil Nadu (Sethi *et al.*, 2015) [4], Andhra Pradesh (Apte & Desai, 2017) [1].

**Status in India:** Rare [1].

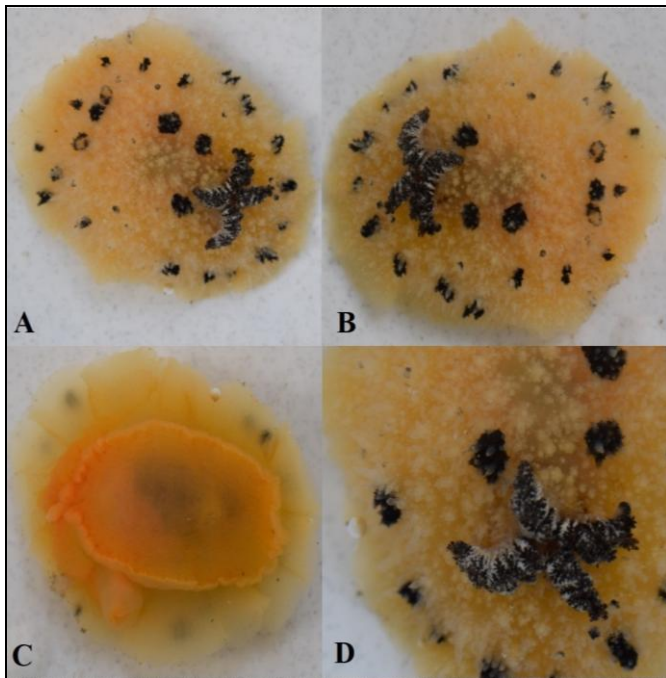
**Seasonal of Occurrence:** Unknown [1].

A total of nine species of the genus *Dendrodoris* were described from India, namely, *Dendrodoris fumata* (Ruppell & Leuckart, 1830), *Dendrodoris tuberculosa* (Quoy & Gaimard, 1832), *Dendrodoris krusensternii* (Gray, 1850), *Dendrodoris nigra* (Stimpson, 1855), *Dendrodoris atromaculata* (Alder & Hancock, 1864), *Dendrodoris guttata* (Odhner, 1917), *Dendrodoris elongata* (Baba, 1936), *Dendrodoris coronata* (Kay & Young, 1969) and *Dendrodoris goani* (Rao & Kumary, 1973). (Table.1)

**Table 1:** Records of genus *Dendrodoris* fauna described from India.

No.	Species	References	Range
1	<i>Dendrodoris fumata</i> (Ruppell & Leuckart, 1830)	Sreeraj <i>et al.</i> [8]	Andaman & Nicobar
		Apte <i>et al.</i> [1]	Andhra Pradesh
		Apte <i>et al.</i> [9]	Gujarat
		Alder <i>et al.</i> [10]	Tamil Nadu
		Apte <i>et al.</i> [1]	Kerala
		Apte <i>et al.</i> [1]	Goa
		Bhave <i>et al.</i> [11]	Maharashtra
2	<i>Dendrodoris tuberculosa</i> (Quoy & Gaimard, 1832)	Apte <i>et al.</i> [1]	Karnataka
		Apte [12]	Lakshadweep
3	<i>Dendrodoris krusensternii</i> (Gray, 1850)	Apte <i>et al.</i> [1]	Andaman & Nicobar
		Ramakrishna <i>et al.</i> [13]	Andhra Pradesh
		Apte <i>et al.</i> [1]	Goa
		Alder <i>et al.</i> [10]	Andhra Pradesh
		Chandran <i>et al.</i> [14]	Lakshadweep

		Chandran <i>et al.</i> <sup>[15]</sup>	Kerala
4	<i>Dendrodoris nigra</i> (Stimpson, 1855)	Ramakrishna <i>et al.</i> <sup>[13]</sup>	Andaman & Nicobar
		Apte <i>et al.</i> <sup>[12]</sup>	Lakshadweep
		Patel <i>et al.</i> <sup>[16]</sup>	Gujarat
		Satyamurti <i>et al.</i> <sup>[17]</sup>	Tamil Nadu
		Alder <i>et al.</i> <sup>[10]</sup>	Andhra Pradesh
		Chandran <i>et al.</i> <sup>[15]</sup>	Kerala
5	<i>Dendrodoris atromaculata</i> (Alder & Hancock, 1864)	Sethi <i>et al.</i> <sup>[4]</sup>	Tamil Nadu
		Apte <i>et al.</i> <sup>[1]</sup>	Andhra Pradesh
6	<i>Dendrodoris guttata</i> (Odhner, 1917)	Dixit <i>et al.</i> <sup>[18]</sup>	Andaman & Nicobar
7	<i>Dendrodoris elongata</i> (Baba, 1936)	Dixit <i>et al.</i> <sup>[18]</sup>	Andaman & Nicobar
8	<i>Dendrodoris coronata</i> (Kay & Young, 1969)	Ravinesh <i>et al.</i> <sup>[19]</sup>	Lakshadweep
9	<i>Dendrodoris goani</i> (Rao & Kumary, 1973)	Rao <i>et al.</i> <sup>[20]</sup>	Goa



**Fig 2:** *Dendrodoris atromaculata* (Alder & Hancock, 1864): (A, B) Dorsal view of Specimen, (C) Ventral view of Specimen, (D) Gill.

### Discussion

This is the first record of *Dendrodoris atromaculata* (Alder & Hancock, 1864) from the West coast of India. This species is known as associates of seaweed *Gracilaria edulis* <sup>[4]</sup>. Occurrence of *Dendrodoris atromaculata*'s is rare in India. Nine species of *Dendrodoris* genus recorded in India out of them three species of *Dendrodoris* were recorded in Gujarat, India. This record of *Dendrodoris atromaculata* (Alder & Hancock, 1864) is a valued addition in the database of West coast's nudibranch diversity.

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