



Opisthobranch (Mollusca: Gastropoda) fauna of Kerala, India: A citizen science initiative

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Abstract

Opisthobranchs are gastropod molluscs with highly diverse body forms, cryptic colouration, diets and habitats, and represent one of the least studied molluscan taxa in India, especially along the southwest coast of India. This paper documents the presence of 15 species of nudibranchs under the families Chromodorididae, Discodorididae, Phyllidiidae and Dendrodorididae from Kerala coast of India, including two new records to India and five new records to west coast of India as the first citizen science initiative in India to document marine biodiversity. The new records to India include *Hoplodoris bifurcata* (Baba, 1993) and *Hoplodoris flammae* Fahey and Gosliner, 2003 (Discodorididae), both being recorded for the first time from the western Indian Ocean.

Keywords: Nudibranchs, sea slug, Goniobranchus, Hoplodoris, Indian Ocean, Kerala

Introduction

Opisthobranchs are polyphyletic group of primarily marine gastropods with many unique features acquired through the novel course of their evolution. Studies on the taxonomy of opisthobranchs from Indian waters have a long history which dates back to 1864 when Alder and Hancock gave an elaborative description of opisthobranchs of Andhra coast. Bhave and Apte (2013) undertook first time comprehensive review of Indian

Opisthobranch fauna. Raghunathan *et al.* (2016) listed 389 species of opisthobranchs belonging to 46 families from India. Recent informative work by Apte and Desai (2017) reported approximately 400 species from India of which 190 species has been reported from west coast of India and 104 species from Lakshadweep group of islands. Some of the major works in this field from the west coast include those of Hornell (1909), Winckworth (1946 a, b) Hornell (1951), Gideon *et al.* (1957), Narayanan (1968 a, b), Menon *et al.* (1961, 1970), Narayanan (1971 a, b), Rao and Krishnakumari (1973), Kasinathan *et al.* (1975), Balani and Patel (1994), Rao (2003), Venkataraman *et al.* (2004, 2012), Zacharia *et al.* (2008), Jagtap *et al.* (2009), Apte *et al.* (2010), Bhave and Apte, (2011), Matwal and Joshi (2011), Apte (2012), Prasade *et al.* (2012), Prasade *et al.* (2013), Carmona *et al.*, (2014), Dishant *et al.* (2014), Parasharya and Patel (2014) and Bhave *et al.* (2015). The earlier reports of opisthobranchs from Kerala coast include those of Narayanan (1968 b), Valdes *et al.* (1999), Ravinesh and Biju Kumar (2013), Biju Kumar (2012), Chinnadurai *et al.* (2014), Ravinesh *et al.* (2014), Sheeja and Padmakumar (2014 a, b), Venkataraman *et al.* (2015) and Apte and Desai, (2017).

This paper is based on the citizen science initiative of the Department of Aquatic Biology and Fisheries, University of Kerala

along with a civil society organization called Friends of Marine Life in Thiruvananthapuram, Kerala represented primarily by local fishers in order to document marine biodiversity of Kerala coast. It records the presence of 15 species of opisthobranchs in Kerala coast, including two new records to India and five new records to the west coast of India.

Material and methods

Live specimens were collected by snorkeling and handpicking from the intertidal areas, inshore rocky reef, reef platforms and mussel beds up to a depth up to 15 m. The collected specimens were photo documented live whenever possible and preserved in 90% ethyl alcohol for further taxonomical studies. The opisthobranchs were identified with key references such as Alder and Hancock (1864), Apte (2009, 2012), Debelius and Kuitert (2007), Yonow (2008, 2012), Gosliner *et al.* (2008, 2015), Venkataraman *et al.* (2015) and Apte and Desai (2017). All the voucher specimens are deposited in the museum collections of the Department of Aquatic Biology and Fisheries, University of Kerala (DABFUK), India with accession numbers DABF/UOK/GAS 1131- 1146, with the names of citizen scientists who collected the specimens.

Results and discussion

Taxonomic notes

Infra-class: Opisthobranchia Milne-Edwards, 1848

Order: Nudibranchia Cuvier, 1817

Superfamily: Doridoidea Rafinesque, 1815

Family: Chromodorididae Bergh, 1891

Genus: *Glossodoris* Ehrenberg, 1831

Glossodoris rufomarginata (Bergh, 1890) (Fig. 1)

Locality: Kovalam (Kerala state)

Distribution: Queensland Australia, China, Hawaii, Fiji, Tanzania

(Rudman, 1986), Indo-Pacific (Rudman, 1999a; Gosliner *et al.*, 2015), Red Sea (Yonow, 1989), Andaman and Nicobar (Sreeraj *et al.*, 2013; Raghunathan, 2015; Venkataraman *et al.*, 2015, Apte and Desai, 2017).

Material examined: 1; Accession number: DABF/UOK/GAS 1131; collected by Robert, P.

Size: 30 mm. Body ovate, elongate and high. The central region of the dorsum is orange-brown in colour with extensive white speckling. There is a broad opaque white sub-marginal band outside the central orange-brown region. Conspicuous, continuous and thin orange brown band along the margins. Hyponotum and dorsal surface of the foot is also characterized by an upper orange brown region with white speckling followed by an external broad opaque white outer region. Several flexible undulations present throughout the mantle edge. Rhinophoral stalks opaque white. Rhinophores lamellate with orange brown lamellae and anterior side of the clubs characterized by a median white line. White rhinophore tips. Gills arranged in an arc around the anus posteriorly. Branchial plume light brownish in colour and subquadrangular in cross section. Foot ventrally translucent white.

Remarks: This is a new report of *G. rufomarginata* from the west coast of India.

Genus: *Goniobranchus* Pease, 1866

Goniobranchus annulatus (Eliot, 1904) (Fig. 2)

Locality: Mulloor, Vizhinjam (Kerala state)

Distribution: Zanzibar (Eliot, 1904 ; Rudman, 1973, 1987), Indian Ocean and Eastern Pacific (Rudman, 1999b), Arabian Gulf, Red sea and Western Indian Ocean (Yonow, 1989, 2008, 2012),



Fig. 1. *Glossodoris rufomarginata* (Bergh, 1890)



Fig. 2. *Goniobranchus annulatus* (Eliot, 1904)

Kenya, Tanzania and north-eastern South Africa (Rudman, 1987), Gulf of California (Bertsch and Kerstitch, 1984), Indian and western Pacific Ocean (Gosliner *et al.*, 2015), Andaman and Nicobar Islands and Goa (Apte and Desai, 2017).

Material examined: 1; Accession number: DABF/UOK/GAS 1132; collected by Shrinivaasu.

Size: 25 mm. Body elongate, ovate and raised. Dorsum white with a prominent, continuous blue marginal band. Two blue rings present on the dorsum, one anteriorly encircling the rhinophores and the other posteriorly encircling the gills. Mantle pustulated with numerous orange-yellow spots. Oral tentacles white in colour. Foot dorsally white with orange yellow spots. Rhinophores perfoliate, with white stalk and purple lamellae and white interspaces. Branchial plumes arranged as a cirlet around the anus and quadrangular in cross section. Gills white in colour with bluish edges.

Remarks: This species was originally described by Eliot (1904) from Zanzibar. This is a new record of *G. annulatus* from Kerala coast.

Goniobranchus cavae (Eliot, 1904) (Fig. 3)

Locality: Vizhinjam (Kerala state)

Distribution: East Africa (Rudman, 1999c), La Réunion, Sri Lanka (Yonow, 2012), East and West coast of Zanzibar (Eliot, 1904), Mandapam, Gulf of Mannar (Padmakumar, 2003), Tropical West Indian Ocean (Debelius and Kuitert, 2007)

Material examined: 1; Accession number: DABF/UOK/GAS 1133; collected by Shrinivaasu, S.

Size: 25 mm. Body ovate, with a white ground colour. The

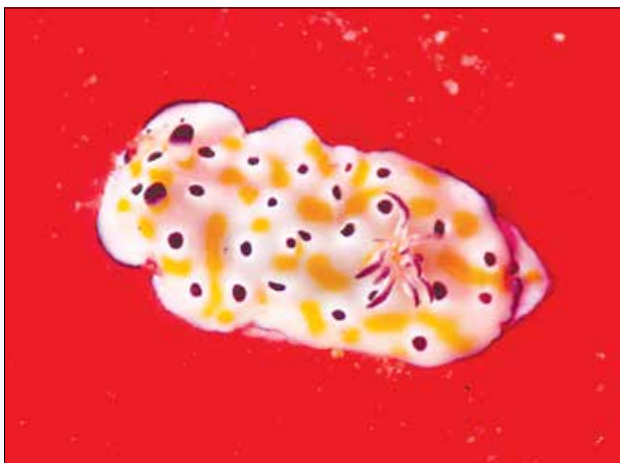


Fig. 3. *Goniobranchus cavae* (Eliot, 1904)

mantle margin bordered with continuous, conspicuous purple line. Tints of pale brown or light rusty orange visible on the dorsum. Numerous large dark purple spots encircled with white scattered on the dorsum. Yellow patches irregularly placed between or among the purple spots. Rhinophoral pocket raised. Rhinophores perfoliate with white distal part and dark purple proximally. Gills white with purple tips and in spiraling inward position. Gills arranged in an arc and triangular in cross section. Foot extends beyond the mantle with a yellow patch and is bordered by purple line.

Remarks: This species was spotted from India by Padmakumar (2003) from Mandapam, Gulf of Mannar, southeast coast of India. This is a new record of *G. cavae* from the west coast of India.

Goniobranchus conchyliatus (Yonow, 1984) (Fig. 4)

Locality: Vizhinjam (Kerala state)

Distribution: Sri Lanka (Yonow, 1984), Burma, Reunion island (Yonow, 2008), Thailand, Maldives, Myanmar (Rudman, 2000), Andaman and Nicobar Islands (Sreeraj *et al.*, 2012 a, 2013, Shaktivel *et al.*, 2014, Apte and Desai, 2017), and Indian Ocean (Gosliner *et al.*, 2015), Goa (Apte and Desai, 2017).

Materials examined: 2; Accession number: DABF/UOK/GAS 1134; collected by Aneesha, A.B.

Size: 7- 9mm. Body ovate in shape with an anterior portion slightly wider than rest of the body. White wavy mantle edge. The ground colour of the body white, bumpy with numerous yellow carbuncles and deep violet markings. Three conspicuous violet marking on the body. One anterior to the rhinophores, another X-shaped one on the middle region of the dorsum and the other one just in the front and side of the gill. Rhinophores perfoliate having deep orange lamellae



Fig. 4. *Goniobranchus conchyliatus* (Yonow, 1984)

resting on translucent white stalks. Eight simple pinnate gills seen as a circlet around the anus. A thin, continuous deep violet line runs laterally between the foot and the mantle. The hyponotum of the anterior mantle flap thickly bordered by deep orange colour and inner dark violet colour. Foot white in colour extended beyond the mantle.

Remarks: *G. conchylitatus* has been recorded for the first time from the Kerala coast of India.

***Goniobranchus setoensis* (Baba, 1938) (Fig. 5)**

Locality: Vizhinjam (Kerala coast)

Distribution: Indo-Pacific (Gosliner *et al.*, 2015), Lakshadweep (Apte and Desai, 2017).

Material examined: 1; Accession number: DABF/UOK/GAS 1135; collected by Shrinivaasu, S.

Size: 30 mm. Body ovate, elongate and translucent white in colour. Opaque white thin line running midline through the dorsum splits in front of the gill and encircle the gill tuft. Mantle edge bordered by a white line. Orange brown sub-marginal band is followed by a white band bearing large and small purple spots. Foot translucent white and dorsally with an opaque white thin line through the midline. Rhinophore stalk translucent white. Rhinophores perfoliate with opaque white core and translucent white lamellae. Gills translucent white with opaque white rachis.

Remarks: This is a new report of *G. setoensis* from the west coast of India.

Genus: *Hypselodoris* Stimpson, 1855



Fig. 5. *Goniobranchus setoensis* (Baba, 1938)

***Hypselodoris nigrostriata* (Eliot, 1904) (Fig. 6)**

Locality: Kovalam (Kerala coast)

Distribution: Zanzibar (Eliot, 1904), Indian Ocean (Rudman, 1999d; Gosliner *et al.*, 2015), Africa to Bali (Debelius and Kuitert, 2007), Chagos Archipelago (Yonow *et al.*, 2002), Vishakhapatnam or Madras (Eliot, 1906), Andaman and Nicobar Islands (Ramakrishna *et al.*, 2010, Venkataraman *et al.*, 2015), Gulf of Mannar (Yogesh *et al.*, 2011), Maharashtra (Pati and Sharma, 2012, Apte and Desai, 2017).

Material examined: 1; Accession number: DABF/UOK/GAS 1136; collected by Robert, P.



Fig. 6. *Hypselodoris nigrostriata* (Eliot, 1904)

Size: 25 mm. Body elongate, ovate with a spatula shaped anterior region. Ground colour of the body bluish white. A w-shaped characteristic marking present on the anterior most end of dorsum; numerous diagonal black lines and yellow maculations present on dorsum. Rhinophores orange lamellate clubs with white tips resting on white stalks. Seven gills arranged posteriorly around the anus. Gills white in colour with bluish orange outline on the rachis. Foot extends beyond the mantle. Dorsally foot has same colour pattern as that of the dorsum, while ventrally bluish white in colour.

Remarks: The present record shows the presence of this species in Kerala coast of India.

***Hypselodoris zebrina* (Alder and Hancock, 1864) (Fig. 7)**

Locality: Kovalam (Kerala state)

Distribution: India, Thailand, Malaysia (Rudman, 2002; Debelius

and Kuitert, 2007; Gosliner *et al.*, 2015), Andhra Pradesh (Alder and Hancock, 1864), Andaman and Nicobar Islands (Ramakrishna *et al.*, 2010; Venkataraman *et al.*, 2015).

Material examined: 1; Accession number: DABF/UOK/GAS 1137

Size: 20 mm. Body translucent purplish white with numerous thin transverse purple lines. Numerous yellow spots on the dorsum and also between the transverse purple lines near the mantle edge. Rhinophores perfoliate, lamellae white with orange red outlines. Branchial plumes arranged posteriorly in a circlet around the anus. Gills white in colour with orange red outline.



Fig. 7. *Hypselodoris zebrina* (Alder & Hancock, 1864)

Remarks: This is the first report of this species from the west coast of India.

Family: Discodorididae Bergh, 1891

Genus: *Hoplodoris* Bergh, 1880

Hoplodoris bifurcata (Baba, 1993) (Fig. 8)

Locality: Kovalam (Kerala state)

Distribution: Japan (Baba, 1993; Rudman, 2003), Okinawa, Philippines (Fahey and Gosliner, 2003), Hawaii (Kay and Young, 1969; Fahey and Gosliner, 2003), Western and Central Pacific Oceans (Gosliner *et al.*, 2015)

Material examined: 1; Accession number: DABF/UOK/GAS 1138; collected by Shrinivaasu, S.

Size: 40 mm. Body ovate, broad and flat. Dorsum highly tuberculated with numerous small, round tubercles. Large rounded tubercles on the central region and it became small and tapering towards the mantle edge. Body kaleidoscopic with tinges of grey, white and dark brown tan. A central band



Fig. 8. *Hoplodoris bifurcata* (Baba, 1993)

with dark brown tubercles present, starting from beyond the rhinophores and extending up to the gill pocket. Tubercles tipped with yellow or brown or sometimes with white followed by a white ring encircling them. Brown ring present around the white ring in some tubercles. Dark brown spots are seen scattered in the dorsum. Rhinophoral sheath elevated and tuberculated; rhinophore stalks dark with lamellate light brownish clubs resting on them with white tips. Gill sheath high, tuberculated holding feathery, tripinnate gills. Gills with shades of light and dark tan.

Remarks: This is a new record of *Hoplodoris bifurcata* from India and this establishes its extended distribution to the western Indian Ocean.

Hoplodoris flammea Fahey and Gosliner, 2003 (Fig. 9)

Locality: Vizhinjam (Kerala state)

Distribution: Bali, Indonesia (Fahey 2003; Fahey and Gosliner, 2003; Gosliner *et al.*, 2015)

Material examined: 1; Accession number: DABF/UOK/GAS 1139; collected by Shrinivaasu, S.

Size: 40 mm. Body ovate, flat with numerous large, rounded tubercles. The ground colour of the body with splashes of light to medium reddish brown colouration. A median patch of fiery red large tubercles present, which originates beyond the rhinophores and extends up to the front of the gill circlet. Some white patches around the red median patch. Tubercles seen towards the mantle edge smaller compared to the tubercles on the central mantle. The top of some large, brown tubercles give a worn out appearance. Rhinophoral sheath conspicuous with the presence of



Fig. 9. *Hoplodoris flammea* Fahey & Gosliner, 2003

tubercles. Rhinophores perfoliate brown clubs with white tips resting on a translucent brown stalk. Gills posteriorly placed around the anus. Gills surrounded by gill sheath, with tubercles at the rim. Six feathery tripinnate gills coloured dark and light brown tan. Foot translucent white with an anterior notch.

Remarks: The only record of this species so far is from Bali, Indonesia (Fahey 2003; Fahey and Gosliner, 2003; Gosliner *et al.*, 2015). This is the new report of *Hoplodoris flammea* from Indian coast and shows the distribution of this species in the western Indian Ocean.

Genus: *Platydoris* Bergh, 1877

Platydoris ellioti (Alder and Hancock, 1864) (Fig. 10a, b)

Locality: Vizhinjam (Kerala state), Muttom (Tamil Nadu state)

Distribution: New Caledonia (Risbec, 1928), Japan (Baba,



Fig. 10 a. *Platydoris ellioti* (Alder & Hancock, 1864) Dorsal view

1949), Papua New Guinea (Dorgan *et al.*, 2002), Tropical Indo-west Pacific (Rudman, 2005), Thailand (Rudman, 2008), Andhra Pradesh, India (Alder and Hancock, 1864), Indian and Western Pacific oceans (Gosliner *et al.*, 2015), Andaman and Nicobar Islands (Apte and Desai, 2017).

Materials examined: 3; Accession number: DABF/UOK/GAS 1140; collected by Ravinesh, R.

Size: 30-50mm. Body flat, ovate, wide and rigid. Numerous cariophyllidia present on the dorsum. Brown in colour with darker spots scattered all over the dorsum; opaque white pigmentations present on the dorsum. Rhinophore sheath elevated; rhinophores perfoliate with orange-yellow clubs.



Fig. 10.b. *Platydoris ellioti* (Alder & Hancock, 1864) Ventral view

Branchial sheath elevated. Six tripinnate gills light brown in colour. Foot orangish yellow. Ventral region of mantle orangish yellow, with numerous dark blotches which form a ring around the foot.

Remarks: This is the third report of *Platydoris ellioti* from India and a new record from the west coast of India.

Genus: *Tayuva* Er. Marcus & Ev. Marcus, 1967

Tayuva lilacina (Gould, 1852) (Fig. 11)

Locality: Kovalam (Kerala state)

Distribution: Tropical and subtropical Indian and Pacific Oceans, Queensland, Philippines, Red Sea, South Africa, Turkey (Rudman, 1999e), Indo Pacific (Gosliner *et al.*, 2015), Gujarat (Apte *et al.*, 2010), Andhra Pradesh (Venkataraman *et al.*, 2015), Maharashtra (Malvan, Ratnagiri), Tamil Nadu (Gulf of Mannar) (Apte and Desai, 2017)

Material examined: 1; Accession number: DABF/UOK/GAS 1141; collected by Robert, P.

Size: 55 mm. Body ovate, elongate and broad. Translucent grey with numerous dark spots scattered all over the dorsum. A raised central dorsum starting beyond the rhinophores and extending up to the gill pocket. Rhinophoral sheath elevated with small white tubercles at the rim. Rhinophores



Fig. 11. *Tayuva lilacina* (Gould, 1852)

perfoliate with yellowish brown lamellae. Gills ochre and placed posteriorly.

Remarks: This is the new report of *Tayuva lilacina* from the southwest coast of India.

Superfamily: Phyllidioidea Rafinesque, 1814

Family: Phyllidiidae Rafinesque, 1814

Genus: *Phyllidia* Cuvier, 1797

Phyllidia varicosa Lamarck, 1801 (Fig. 12)

Locality: Enayam (Tamil Nadu state)

Distribution: Indo-West Pacific (Rudman, 1999f; Gosliner *et al.*, 2015), Western Pacific Ocean, Vietnam, Philippines, Solomon Islands, Australia, Papua New Guinea, Thailand (Brunckhorst, 1993), Mauritius, South Africa, Sri Lanka (Yonow, 2012), Andaman and Nicobar Islands (Ramakrishna *et al.*, 2010; Apte and Desai, 2017), Lakshadweep (Rao *et al.*, 1974; Namboodiri and Sivadas, 1979; Rao and Rao, 1991; Apte, 2009; Venkataraman *et al.*, 2004, 2012; Ravinesh and Biju Kumar 2015, Apte and Desai, 2017), Karnataka (Zacharia *et al.*, 2008, Apte and Desai, 2017), and Gulf of Mannar (Yogesh *et al.*, 2011, Apte and Desai, 2017).



Fig. 12. *Phyllidia varicosa* Lamarck, 1801

Material examined: 1; Accession number: DABF/UOK/GAS 1142; collected by Shrinuvaasu, S.

Size: 70 mm. Body elongate, broad and ovate. The ground colour of the body black with three bluish grey ridges on the dorsum. Dorsum and the ridges bear numerous warty tubercles with bluish grey bases and yellow tips. Rhinotubercles present. Rhinophores perfoliate with yellow lamellae. Oral tentacles separate and digitate. Gills simple, grey in colour and arranged between the foot and underside of the mantle. Anus dorso-median. Foot sole grey with a black broken longitudinal stripe.

Remarks: This is a new record of this species from the southern west coast of India.

Genus: *Phyllidiella* Bergh, 1869

Phyllidiella zeylanica (Kelaart, 1859) (Fig. 13)

Locality: Enayam (Tamil Nadu state)

Distribution: Western Pacific Ocean, Indian Ocean, Thailand (Brunckhorst, 1993) Maldives, Seychelles, Christmas Island, Sri Lanka (Yonow, 2012), Indian and western Pacific Oceans (Gosliner *et al.*, 2015), Gulf of Mannar (Yogesh *et al.*, 2011), Andaman and Nicobar Islands (Ramakrishna *et al.*, 2010; Sreeraj *et al.*, 2012a; Venkataraman *et al.*, 2015), Lakshadweep (Apte, 2009, Ravinesh and Biju Kumar, 2015; Apte and Desai, 2017), Gujarat (Matwal and Joshi, 2011; Apte and Desai, 2017), Karnataka (Zacharia *et al.*, 2008; Apte and Desai, 2017).

Material examined: 1; Accession number: DABF/UOK/GAS 1143; collected by Shrinivaasu, S.

Size: 30 mm. Body elongate, ovate. Ground colour of the body



Fig. 13. *Phyllidiella zeylanica* (Kelaart, 1859)

black with bluish grey to white irregular ridges. Ridges curved, interrupted and joined anteriorly and posteriorly. Tubercles form a circle around the anus which is placed posteriorly. Mantle margin with numerous tiny tubercles. Rhinophore clavate and black in colour. Gills numerous and grey in colour. Oral tentacles triangular in shape with black in colour anteriorly and grey posteriorly. Foot sole grayish in colour

Remarks: This is a new report of this species from southern west coast of India.

Family: Dendrodorididae O'Donoghue, 1924 (1864)

Genus: *Dendrodoris* Ehrenberg, 1831

Dendrodoris nigra (Stimpson, 1855) (Figs. 14a, b)

Locality: Kovalam, Avaduthura, Vizhinjam (Kerala state)

Distribution: Indo-west Pacific (Gosliner *et al.*, 2015), Red Sea (Yonow, 1990, 2008), Maldives, Zanzibar, Gulf of Oman (Yonow, 2012), Australia, Christmas Island, Fiji (Brodie *et al.*, 1997), Andhra Pradesh (Alder and Hancock, 1864), Andaman and Nicobar Islands (Ramakrishna *et al.*, 2010; Venkataraman *et al.*, 2015, Apte and Desai, 2017), Lakshadweep (Apte, 2009; Apte and Desai, 2017), Gujarat (Apte and Desai, 2017), and Tamil Nadu (Satyamurthi, 1952; Apte and Desai, 2017).

Materials examined: 5; Accession number: DABF/UOK/GAS 1145; collected by Sneha Chandran, B.K.

Size: 35 mm - 40 mm. Body elongate and smooth with thin undulating mantle margin. The ground colour of the body black with light coloured mantle margin (15a). Slightly elevated rhinophoral pocket with simple rim. Rhinophore perfoliate with a rounded clavus. Rhinophoral clubs black in colour with white



Fig. 14 a. *Dendrodoris nigra* (Stimpson, 1855)



Fig. 14 b. *Dendrodoris nigra* (Stimpson, 1855)

tips. Gills black, numerous, branched and arranged in a circlet around the anus. The gills are placed extreme posterior end on the dorsum. The brownish pink (15b) form has brownish black ground colour with some white spots on the dorsum, rhinophores brown, perfoliate with a rounded clavus and white tips. Foot black in colour. Gills compact, branched and curved inward and foot brownish pink in colour.

Remarks: This is the new report of *Dendrodoris nigra* from the Kerala coast of India. Two colour morphs, one dark black and another brownish pink were recorded during the study.

Dendrodoris krusensternii (Gray, 1850) (Fig. 15)

Locality: Vizhinjam (Kerala state)

Distribution: Indo Pacific (Gosliner *et al.*, 2015), Japan (Valdes and Fahey, 2006), Tropical and warm temperate Indo-West Pacific (Rudman, 1998), Andhra Pradesh (Alder and Hancock, 1864, Apte and Desai, 2017), Andaman and Nicobar Islands (Ramakrishna *et al.*, 2010; Venkataraman *et al.*, 2015; Apte and Desai, 2017), Goa (Apte and Desai, 2017)

Material examined: 1; Accession number: DABF/UOK/GAS 1146; collected by Robert, P.

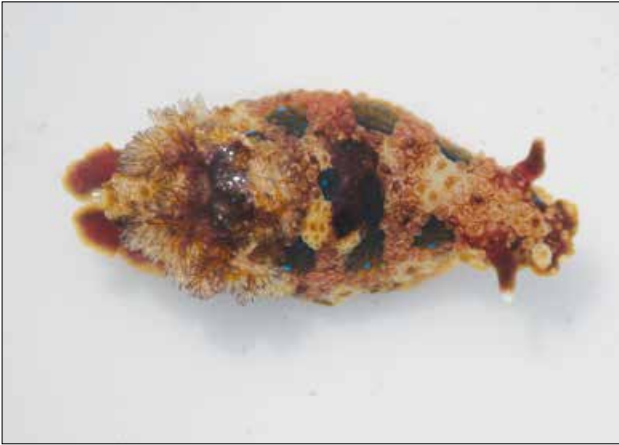


Fig. 15. *Dendrodoris krusensternii* (Gray, 1850)

Size: 40 mm. Body brown, ovate and convex, presence of numerous yellowish brown and white fleshy tubercles scattered on the dorsum, three rows of isolated brown patches present among the tubercles. Two of these emerge laterally behind the rhinophore clubs and the other seen midline on the dorsum. 5-8 electric blue spots on the brown patches. Mantle edge bordered with light straw colour. Rhinophores brown lamellate clubs with white tips. Gills light yellowish white, large, feathery, highly branched and bordered with brown. Foot brown in color with light straw coloured border.

Remarks: This is a new report of *Dendrodoris krusensternii* from the Kerala coast of India.

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