

5. *Moduza procris* (Cramer): *Mussaenda erythrophylla* Schumach & Thonn., Rubiaceae. Large spreading ornamental shrub, often cultivated in gardens. Recorded from Puttur. October 2011.
6. *Neptis jumbha* (Moore): *Bauhinia acuminata* L., Fabaceae. Erect shrub, cultivated in gardens. Recorded from Puttur. March–May 2011–2013.
7. *Junonia iphita* (Cramer): *Synedrella nodiflora* Gaertn., Asteraceae. Annual erect herb, common weed on cultivated lands. Recorded from Puttur. May 2011.

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## 15. THREE NEW RECORDS OF OPISTHOBANCHS (MOLLUSCA) FROM LAKSHADWEEP ISLANDS, INDIA

DEEPAK APTE<sup>1,3</sup>, IDREES BABU<sup>2</sup> AND V.K. SALAHUDDIN<sup>1</sup>

<sup>1</sup>Bombay Natural History Society, Hornbill House, Shaheed Bhagat Singh Road, Mumbai 400 001, Maharashtra, India.

<sup>2</sup>Department of Science and Technology, Lakshadweep Administration, Kavaratti, Lakshadweep.

<sup>3</sup>Email: spiderconch@gmail.com

\*Corresponding author

doi:

## Introduction

The earliest work on the opisthobranch fauna of Lakshadweep Islands, India, was by Gardiner (1903), which was followed by a note by Rao *et al.* (1974), and Surya Rao and Rao (1991). Thereafter, there were no studies on opisthobranchs from these islands until recently.

The opisthobranch fauna of Lakshadweep Islands is being studied by the present authors since 2004 under the All India

Co-ordinated Project on Taxonomy (AICOPTAX)-Mollusca programme supported by the Ministry of Environment, Forest and Climate Change, Government of India, and Department of Science and Technology, Lakshadweep Administration. The current count in India is approximately 350 species, of which the Lakshadweep Islands have approximately 80 species. Of these 80 species, 63 species were first reported by Apte (2009), Apte and Salahuddin (2010), and Apte and

Bhave (2014). The present work reports three opisthobranch species, namely *Scyllaea pelagica*, *Goniobranchus alius*, and *Verconia norba*, of which one is a new record to India and all three are new to Lakshadweep Islands. The contributions of these studies are invaluable in understanding the diversity of these least studied molluscs from Lakshadweep Islands.

### Methodology

Surveys were conducted in the intertidal region of the eastern lagoon of Agatti Island, Lakshadweep. The specimens were collected, and after morphological study were preserved in 90% ethyl alcohol and deposited in the BNHS collections.

Many alternative classifications are currently being used on the basis of molecular studies. A modified version of the classification presented by Bouchet and Rocroi (2005) and used by World Register of Marine Species (**WoRMS 2013**) was followed. Unless specified, the worldwide distribution is reproduced from Gosliner *et al.* (2008).

### Results

Phylum: Mollusca

Class: Gastropoda Cuvier, 1795

Subclass: Heterobranchia Burmeister, 1837

Order: Nudibranchia Cuvier, 1817

Superfamily: Tritonioidea Lamarck, 1809

Family: Scyllaeidae Alder & Hancock, 1855

Genus: *Scyllaea* Linnaeus, 1758

### *Scyllaea pelagica* Linnaeus, 1758

**Synonyms:** *Scyllaea edwardsii* A.E. Verrill, 1878; *Scyllaea grayae* A. Adams & Reeve, 1850; *Scyllaea hookeeri* Gray M.E., 1850; *Scyllaea marmorata* Alder & Hancock, 1864; *Scyllaea pelagica* var. *marginata* Bergh, 1871; *Scyllaea viridis* Alder & Hancock, 1864.



Fig. 1: *Scyllaea pelagica*

**Size:** 15 mm (Fig. 1). Single specimen (BNHS-Opistho-639).

**Description:** *S. pelagica* is considered semi-planktonic, associated with the floating macroalgae *Sargassum* (Yonow *et al.* 2002).

Body dorsoventrally flattened; rhinophore sheaths flattened; rhinophores small; two pairs of dorsolateral lobes diagnostic, mediodorsal crest present at the posterior end of body. Body yellowish with brown mottling and some white markings; single row of brilliant blue spots visible on dorsal surface. Blue spots also present on both sides of body.

**Distribution:** Caribbean Sea, Costa Rica, Cuba, Gulf of Mexico, Mediterranean Sea, North Atlantic, Spain, Japan, France, Turkey, USA, Bahamas. The species was previously reported from India along the coast of Andhra Pradesh as *Scyllaea marmorata* (Alder and Hancock 1864). It was also reported from Gulf of Mannar by Farran (1905). However, Farran's work is mostly on Ceylonese nudibranchs with some study areas that are currently in Indian territory, like Gulf of Mannar. Thus, veracity of its presence in the Indian part of Gulf of Mannar could not be ascertained. This is the first record of the species from Lakshadweep.

Phylum: Mollusca

Class: Gastropoda Cuvier, 1795

Subclass: Heterobranchia Burmeister, 1837

Order: Nudibranchia Cuvier, 1817

Superfamily: Doridoidea Rafinesque, 1815

Family: Chromodorididae Bergh, 1891

Genus: *Goniobranchus* Pease, 1866

### *Goniobranchus alius* (Rudman, 1987)

**Synonym:** *Chromodoris alius* Rudman, 1987.



Fig. 2: *Goniobranchus alius*

**Size:** 40 mm and 35 mm (Fig. 2). Two specimens (BNHS-Opistho-641 and BNHS-Opistho-701).

**Description:** The specimens match the description by Rudman (1987) which is reproduced herewith. Creamy-white mantle with six greyish patches and small translucent pits, each with a golden-yellow spot, giving a pitted appearance. Violet border to mantle broken into a series of spots, among which is a diffused submarginal band of milky yellow. Rhinophore stalks translucent white and **clubs dark brown**. Gills translucent with white edging.

**Distribution:** Endemic to the Indian Ocean along South Africa, Madagascar, Tanzania, Reunion Island, and Sri Lanka. This is the first record of the species from Lakshadweep.

Phylum: Mollusca

Class: Gastropoda Cuvier, 1795

Subclass: Heterobranchia Burmeister, 1837

Infraclass: Opisthobranchia

Order: Nudibranchia Cuvier, 1817

Superfamily: Doridoidea Rafinesque, 1815

Family: Chromodorididae Bergh, 1891

Genus: *Verconia* Pruvot-Fol, 1931

***Verconia norba*** (Er. Marcus & Ev. Marcus, 1970)

**Synonym:** *Noumea norba* Er. Marcus & Ev. Marcus, 1970.

**Size:** 40 mm (Fig. 3). Single specimen (BNHS-Opistho-1234).

**Description:** Mantle pinkish orange. A broad creamy white band around mantle edge. On inside edge of this band are a series of reddish purple streaks or marks. Central part of mantle has a continuous white median band which always encircles gill pocket. Gills and rhinophores tinged orange-red. In similar looking *Verconia purpurea* (Baba 1949) (known previously as *Noumea purpurea*), white median band runs from behind rhinophores to front of gills, but never encircles gill pockets.



Fig. 3: *Verconia norba*

**Distribution:** Indonesia and Hawaii (Rudman 1999), South Africa, Madagascar, Reunion Island, Red Sea, Gulf of Oman, Australia, Solomon Islands, Philippines, Papua New Guinea, Japan. This is the first record of the species from Lakshadweep and from India.

#### Conclusion

Despite being one of the finest coral reef ecosystems in India, faunal studies in Lakshadweep Islands are limited. Among Mollusca, opisthobranchs are least studied on these islands. The present records thus assume great significance.

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## 16. FIRST RECORD OF *TITISCANIA LIMACINA* BERGH, 1890 (MOLLUSCA: GASTROPODA) FROM INDIA

DEEPAK APTE<sup>1,2,\*</sup> AND SAYALI NERURKAR<sup>1,3</sup><sup>1</sup>Bombay Natural History Society, Hornbill House, S.B. Singh Road, Mumbai 400 001, Maharashtra, India.<sup>2</sup>Email: spiderconch@gmail.com<sup>3</sup>Email: sayali\_686@yahoo.co.in

\*Corresponding author

doi:

### Introduction

Franklin *et al.* (2015) provided a comprehensive review of studies carried out on Phylum Mollusca during the past 135 years in the Andaman & Nicobar Islands. The most notable work among these is by Subba Rao (2003) and Subba Rao and Dey (2000), who reported 1,282 species of molluscs from Andaman & Nicobar Is. More recent work is by Arumugam *et al.* (2010), Chandra and Rajan (2010), and Franklin *et al.* (2013, 2014). Some recent studies focused mainly on lesser studied opisthobranch fauna (Raghunathan *et al.* 2010a,b; Ramakrishna *et al.* 2010; Sreeraj *et al.* 2010, 2012, 2013). Despite Mollusca being one of the most studied taxa from these islands, new finds are not uncommon, suggesting that the area requires frequent systematic studies.

Phylum: Mollusca

Class: Gastropoda Cuvier, 1795

Subclass: Neritimorpha Golikov &amp; Starobogatov, 1975

Order: Cycloneritimorpha

Superfamily: Neritopsoidea Gray, 1847

Family: Titiscaniidae Bergh, 1890

Genus: *Titiscania* Bergh, 1890Species: *limacina* Bergh, 1890

### *Titiscania limacina* Bergh, 1890

**Present record:** Kodiaghat (11° 31' 34.15" N; 92° 43' 27.12" E), Burmanallah (11° 33' 31.70" N; 92° 43' 49.41" E) in South Andaman (Fig. 1).

Two specimens (Fig. 2a) were found crawling on coral rubble, c. 20 m away from freshwater runoff meeting the sea. The specimens were deposited in the collections of the Bombay Natural History Society (voucher nos BNHS Gastro

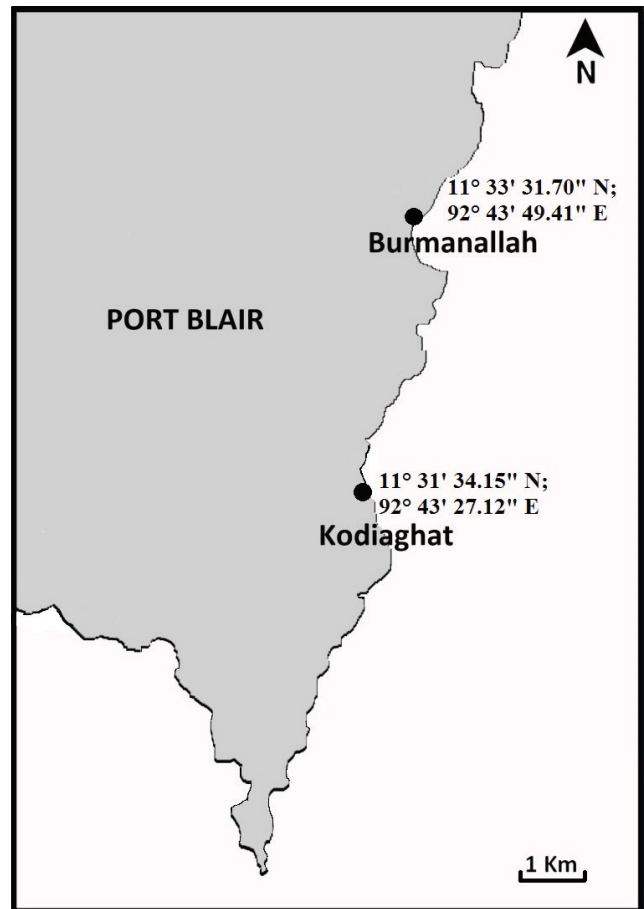


Fig. 1: Sampling locations of *Titiscania limacina*

1611 and 1762). Thereafter, several specimens were observed from this area.

**Global Distribution:** Guam (Smith 2003), Okinawa, Japan (Kano *et al.* 2002), Mauritius, Philippines, Camiguin,