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.

ACKNOWLEDGEMENTS

We thank Dr. Krushnamegh Kunte for his advice and discussion. We would like to thank Prof. Deviprasad K.N., Dr. K. Gopalakrishna Bhat, and Mr. Shrikrishna Ganaraj Bhat for identification of host plants and also for their guidance. Special thanks to the Chairman, Department of Applied Zoology, Mangalore University for his support throughout the work.

REFERENCES

Balakrishnan, V.C., M.J. Palot & C. Radhakrishnan (2006): New host plant records of the Short-banded Sailer, *Neptis columella* (Cramer) and the Chestnut-streaked Sailer, *Neptis jumbha* (Moore) [Nymphalidae: Lepidoptera: Insecta]. Records of Zoological Survey of India 106(2): 125–126.

Bhat, K.G. (2003): Flora of Udupi. Published by Indian Naturalist, Chitpady, Udupi. 350 pp.

Bhat, K.G. (2014): Flora of South Kanara (Dakshina Kannada and Udupi district of Karnataka). Published by Aakriti Prints, Udupi. 686 pp.

Guntihagarai, K., T.N.A. Perumal, K. Jayaram & M. Ganesh Kumar (1998): Some South Indian Butterflies. Field guide published under Project Lifescape. Indian Academy of Science, Bangalore. 270 pp.

Kalesh, S. & S.K. Prakash (2007): Additions to larval host plants of butterflies of the Western Ghats, Kerala, southern India (Rhopalocera, Lepidoptera): Part 1. J. Bombay Nat. Hist. Soc. 104(2): 235–237.

Khemkar, I. (2008): The Book of Indian Butterflies. Bombay Natural History Society and Oxford University Press, Mumbai. 497 pp.

Kocher, S.D. & E.H. Williams (2000): The diversity and abundance of North American butterflies vary with habitat disturbance and geography. *Journal of Biogeography* 27: 785–794.

Kunte, K. (2000): Butterflies of Peninsular India. Universities Press, Hyderabad and Indian Academy of Sciences, Bangalore. 254 pp.

Kunte, K. (2006): Addition to known larval host plants of Indian butterflies. *J. Bombay Nat. Hist. Soc.* 103(1): 119–122.

Kunte, K., P. Roy, S. Kalesh & U. Kodandaramaiah (eds) (2015): *Butterflies of India*. v. 2.20. Indian Foundation for Butterflies.

Larsen, T.B. (1988): The butterflies of the Nilgiri mountains of southern India (Lepidoptera: Rhopalocera). *J. Bombay Nat. Hist. Soc.* 85(1): 26–43.

Robinson, G.S., P.R. Ackery, I.J. Kitching, G.W. Beccaloni & L.M. HERNÁNDEZ (2001): Hostplants of the Moth and Butterfly Caterpillars of the Oriental Region. The Natural History Museum, London.

Sawchik, J., M. Duprene & Ph. Lebrun (2005): Distribution patterns and indicator species of butterfly assemblages of wet meadows in southern Belgium. *Belgian Journal of Zoology* 135(1): 43–52.

Veenakumar, K., P. Mohanraj & P.V. Sreekumar (1998): Host plant utilization by butterfly larvae in the Andaman and Nicobar Islands (Indian Ocean). *Journal of Insect Conservation* 1: 235–246.

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

Deepak Apte1,2, Idrees Babu2 and V.K. Salahuddin1

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

2Department of Science and Technology, Lakshadweep Administration, Kavaratti, Lakshadweep.

*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.

**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, mediiodorsal 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.

**Goniobranchus alius** (Rudman, 1987)

**Synonym:** Chromodoris alius Rudman, 1987.
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
Infraclasse: Opisthobranchia
Order: Nudibranchia Cuvier, 1817
Superfamily: Doridoidea Rafinesque, 1815
Family: Chromodorididae Bergh, 1891
Genus: Verconia Pruvo-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.

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.

ACKNOWLEDGEMENTS

We take this opportunity to acknowledge the financial support provided by MoEFCC, Government of India under AICOPTAX-Mollusca. Dr. J.R. Bhatt, Advisor, MoEFCC is a constant source of encouragement. The project is being implemented in collaboration with the Department of Science and Technology, Lakshadweep Administration.

REFERENCES

Alder, J. & A. Hancock (1864): Notice on the collection of nudibranchiate mollusca made in India by Walter Eliot Esq. With descriptions of several new genera and species. Transactions of the Zoological Society of London 5: 117–147.

Apte, D.A. (2009): Opisthobranch fauna of Lakshadweep Islands, India with 52 new records to Lakshadweep and 40 new records to India. J. Bombay Nat. Hist. Soc.106(2): 162–175.

Apte, D.A. & V.K. Salauddin (2010): Record of Hexabranchus sanguineus (Rüppell & Leuckart 1828) from Lakshadweep Archipelago, India. J. Bombay Nat. Hist. Soc.107(3): 261–262.

Apte, D.A. & Vishal Bhave (2014): New records of opisthobranchs from Lakshadweep, India (Mollusca: Heterobranchia). Journal of Threatened Taxa 6(3): 5562–5568; http://dx.doi.org/10.11609/jott.o3487.5562-8.

Bouchet, P. & J.-P. Rocroi (2005): Classification and nomenclature of gastropod families. Malacologia 47(1–2): 1–397.

Farran, G.P. (1905): Report on the Opisthobranchiate Mollusca collected by Prof. Herdman. Pp. 29–364. In: Herdman, W.A. (Ed.): Report on the pearl oyster fisheries of the Gulf of Mannar. The Ray Society, London.

Gardiner, J.S. (1903): The fauna and geography of the Maldives and Laccadive Archipelagoes. Vol 2. Cambridge University Press, UK. Pp. 1080.

Gosliner, T.M., D.W. Behrens & Á. Valdes (2008): Indo-Pacific Nudibranchs and Sea Slugs: A Field Guide to the World’s Most Diverse Fauna. Sea Challengers Natural History Books and the California Academy of Sciences. 425 pp.

Rao, K.V., P. Sivadas & L.K. Kumary (1974): On three rare doridiform nudibranch molluscs from Kavaratti Lagoon, Laccadive Islands. Journal of the Marine Biological Association of India 16(1):
113–125.
RUDMAN, W.B. (1987): The Chromodorididae (Opisthobranchia: Mollusca) of the Indo-west Pacific: Chromodoris epicuria, C. aurospurea, C. annulata, C. coli and Risbecia tryoni colour groups. Zoological Journal of the Linnean Society 90: 305–407.

RUDMAN, W.B. (1999): Noumea norba Marcus & Marcus, 1970. In: Sea Slug Forum. Australian Museum, Sydney. Available from http://www.seaslugforum.net/factsheet/noumnorb. Accessed on February 13, 2016.

Surva Rao, K.V. & N.V. Subba Rao (1991): Fauna of Lakshadweep: Mollusca. State Fauna Series. Published by the Director, Zoological Survey of India, Calcutta. Pp. 399.

WoRMS (2013): Yonow, N., R. Charles Anderson & Susan G. Buttress (2002): Opisthobranch molluscs from the Chagos Archipelago, central Indian Ocean. Journal of Natural History 36: 831–882.

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

DEEPAK APTE1,2,* AND SAYALI NERURKAR1,3

1Bombay Natural History Society, Hornbill House, S.B. Singh Road, Mumbai 400 001, Maharashtra, India.
2Email: spiderconch@gmail.com
3Email: 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 & Starobogatov, 1975
Order: Cycloneritimorpha
Superfamily: Neritoidea Gray, 1847
Family: Titiscaniidae Bergh, 1890
Genus: Titiscania Bergh, 1890
Species: 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 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,