

Occurrence of deep-seagastropod, *Turbonilla juliae* Peñas and Rolán, 2010 (Family: Pyramidellidae) in Indian waters: A checklist of genus *Turbonilla*

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Abstract

This paper brings the first report of the species *Turbonilla juliae* Peñas and Rolán (2010), a micro gastropod of the family Pyramidellidae, from the Indian waters: Hare Island, Gulf of Mannar, Southeast coast of India. A checklist of genus *Turbonilla* in the Indian waters is also presented.

Keywords: First Report, India, microgastropod, *Turbonilla*

Introduction

The family Pyramidellidae comprises a large group of marine microgastropods. They are ectoparasitic on other invertebrates. The family is distributed worldwide from the coastlines to the deep-sea regions. According to Peñas and Rolán (1998) Pyramidellidae is one of the largest mollusc families with over 6,000 named species and more than 300 generic and subgeneric taxa (Schander *et al.*, 1999, 2003). The taxonomy of the genus *Turbonilla* from the Indian coasts is poorly understood, in contrast to the coasts of South America, Europe and Africa, where recent syntheses on *Turbonilla* have been carried out (Van Aartsen, 1981; Schander 1994; Peñas *et al.*, 1996; Peñas and Rolán, 1997; Pimenta and Absalão 2004; Lygre and Schander (2010). This view is justified by the absence of any taxonomic review on Pyramidellidae family in India, and hence substitute the view that several species yet to be reported and many undescribed may exist in this region. A study of recent collections in the coral reef areas of the Gulf of Mannar, Southeast coast of India led us to recognize a new record of the genus *Turbonilla*, which is described here. The checklist of genus *Turbonilla* from India is also prepared and presented.

Materials and Methods

The specimen studied was collected from the fringing reef (at a depth of 3-4 m) at Hare Island, Gulf of Mannar, located along the southeast coast of India (09°11'03.02"N, 79°04'17.66"E). Samples taken were dried, sieved into fractions and examined under a stereomicroscope (Olympus SZX 16). A gastropod under Pyramidellidae family, which was slender and elongated was found out and identified using the handbooks by Satyamurti (1952), Bosch *et al.* (1995), Fernando and Fernando (2002), and Peñas and Rolán (2010). The specimen identified was registered (Reg. No. MBRC/ZSI M.2142) and added to the National Zoological Collections of Marine Biology Regional Centre. The database World Register of Marine Species (WoRMS) was referred for verification of currently accepted names of species.

Results

Phylum MOLLUSCA
Class GASTROPODA Cuvier, 1795
Heterobranchia Burmeister, 1837
Superfamily PYRAMIDELLOIDAE Gray, 1840
Family PYRAMIDELLIDAE Gray, 1840

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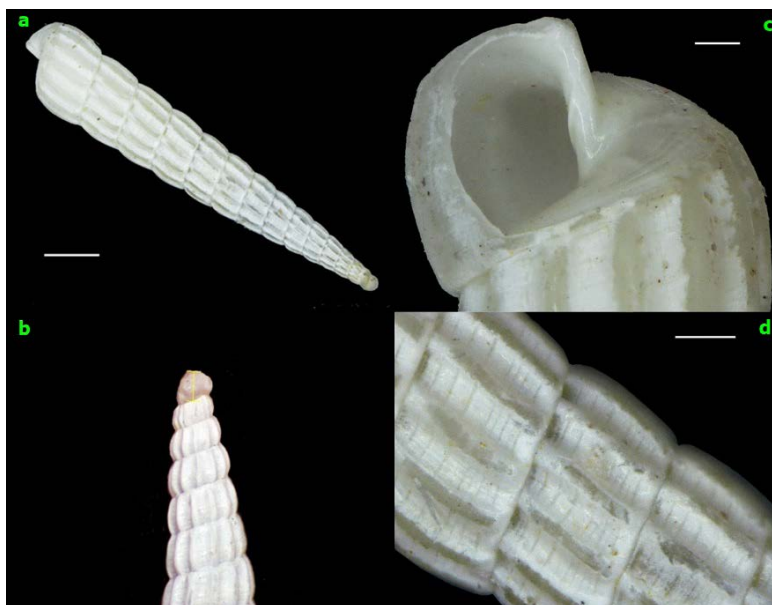


Figure 1. a) *Turbonilla juliae* collected from Hare Island, Scale bar: 0.64 mm, b) Protoconch (lower image), scale bar: 0.15 mm, c) Mouth part (upper image), scale bar: 0.12 mm, and d) Sculpture on whorl (lower image), scale bar: 0.18 mm.

Table 1. Checklist of genus *Turbonilla* species from India

Sl. No.	Scientific name	WoRMS	Location	Reference
1.	<i>Turbonilla kemp</i> Ray, 1968	–	Odisha coast	Subba Rao <i>et al.</i> 1991; Odé 1998
2.	<i>Turbonilla materna</i> Melvill, 1912	–	Odisha coast	Subba Rao <i>et al.</i> 1991
3.	* <i>Turbonilla melvilli</i> Ray, 1968	<i>Turbonilla melvilli</i> Dautzenberg, 1912	Odisha coast	Odé 1998
4.	<i>Turbonilla prashadi</i> Ray, 1968	–	Odisha coast	Subba Rao <i>et al.</i> 1991; Odé 1998
5.	<i>Turbonilla prestoni</i> Ray, 1968	–	Odisha coast	Subba Rao <i>et al.</i> 1991
6.	<i>Turbonilla puriensis</i> Ray, 1968	–	Odisha coast	Subba Rao <i>et al.</i> 1991; Odé 1998
7.	<i>Turbonilla rambhanensis</i> (Preston, 1914)	+	Odisha coast, Tamil Nadu coast	Subba Rao <i>et al.</i> 1991, 1995
8.	<i>Turbonilla crichtoni</i> Winckworth, 1940	–	Odisha coast, Tamil Nadu coast	Subba Rao <i>et al.</i> 1991; Odé 1998
9.	<i>Turbonilla coromandelica</i> Melvill and Standen 1898	–	Tamil Nadu coast	Odé 1998
10.	<i>Turbonilla sororia</i> Melvill, 1896	+	Maharashtra coast	Odé 1998
11.	<i>Turbonilla emiliae</i> Melvill, 1896	+	Maharashtra coast	Odé 1998
12.	<i>Turbonilla eumenes</i> Melvill, 1910 = <i>Pyrgiscus eumenes</i> (Melvill, 1910)	+	Maharashtra coast	Odé 1998
13.	<i>Turbonilla eucteana</i> Melvill, 1910	+	Maharashtra coast	Odé 1998
14.	<i>Turbonilla neogila</i> Melvill, 1910	+	Maharashtra coast	Odé 1998
15.	<i>Turbonilla quaestuosa</i> Melvill, 1910	+	Maharashtra coast	Odé 1998

16.	<i>Turbonilla terebrina</i> Melvill, 1896	+	Maharashtra coast	Odé 1998
17.	<i>Turbonilla felicitata</i> Laseron, 1959	+	West Bengal coast	Ramakrishna <i>et al.</i> 2003; Subba Rao 2003
18.	<i>Turbonilla foveolata</i> Preston, 1908	-	Andaman Island	Subba Rao and Dey 2000
19.	<i>Turbonilla rubrobrunnea</i> Preston, 1908	-	Andaman Island	Subba Rao and Dey 2000
20.	<i>Turbonilla intuslirata</i> de Folin, 1879	-	Andaman Island	Odé 1998
21.	<i>Turbonilla vittata</i> de Folin, 1879	-	Andaman Island	Odé 1998
22.	<i>Turbonilla intuslirata</i> de Folin, 1879	-	Andaman Island	Odé 1998
23.	<i>Turbonilla microcheilos</i> de Folin & Perier, 1879	-	Andaman Island	Odé 1998
24.	<i>Turbonilla nicobarica</i> Thiele, 1925	-	Andaman Island	Odé 1998
25.	<i>Turbonilla taeniata</i> de Folin, 1879	-	Andaman Island	Odé 1998
26.	<i>Turbonilla rubrolineata</i> Preston, 1908	-	Andaman and Nicobar Islands	Venkataraman <i>et al.</i> 2004
27.	<i>Turbonilla juliae</i> Peñas and Rolán, 2010	-	Tamil Nadu coast	Present study

*Authority of *Turbonilla melvilli* is different from that of WoRMS.

Subfamily TURBONILLINAE Bronn, 1849

Genus *Turbonilla* Risso, 1826

Species *Juliae* Peñas and Rolán, 2010

Description: Protoconch is prominent and has 2.5 whorls and its axis tilted 90° with respect to teleoconch (Figure 1). It is narrower than the first teleoconch whorl and overhangs the suture of the first whorl of the teleoconch, which is bent in this area. Teleoconch with a very high spire, having 9 convex whorls that gradually increase in height. The last whorl is angular at the periphery. Suture is not very deep. The base is slightly concave. Axial sculpture is formed by few ribs, ca. 12 ribs, however well marked, arched, opisthocline, about half as wide as their interspaces, which do not reach lower suture in the later whorls; interspaces and ribs are interrupted abruptly at the periphery of the last whorl. Spiral sculpture is clear and visible only in the interspaces, formed by very narrow and equidistant furrows of around 10 numbers in the penultimate whorl, besides a cord in the periphery of the last whorl. Base is with numerous spiral striae. Aperture is rhomboid (Figure 2). Columella is straight and orthocline without columellar tooth.

Colour: Opaque, milk-white and not bright.

Dimensions: 5.07 mm (longest part) X 1.96mm (last whorl)

Depth: 4 m

Remarks: The current specimen is similar to *Pyrgiscilla inaequistriata* Saurin, 1959 now accepted as *Pyrgiscus inaequistriatus* (Saurin 1959) (WoRMS, accessioned on 19.9.2018), described from Vietnam. However, *P. inaequistriatus* has a less prominent protoconch, smaller nucleus, and the whorls of the teleoconch quickly ascend in height (for the same height it has 7 whorls whereas *Turbonilla juliae* has 9), less convex, and the ribs orthocline, equal or wider than their interspaces (Peñas and Rolán, 2010).

Discussion

Turbonilla juliae has been dealt by Peñas and Rolán (2010) from Fiji, New Caledonia and Solomon Islands between the depths of 109 and 183 m recently. In Hare Island, Gulf of Mannar, Southeast coast of India this species was collected at depths between 3 and 4 m. The occurrence of this species in coral reef areas indicates the possibility of occurrence of several new distributional records and undescribed species belonging to this family in this region. The checklist of extant marine *Turbonilla* confirms the report of 27 species from Indian waters: 9 species from the Andaman Islands, 8 from the Odisha coast, 7 from the Maharashtra coast, 4 from the Tamil Nadu coast and 1 from the West Bengal coast.

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