



# FIRST RECORD OF THE ALIEN SEA SLUG *THECACERA PENNIGERA* (MONTAGU, 1813) (MOLLUSCA: GASTROPODA: NUDIBRANCHIA: POLYCERIDAE) FROM SOUTHWEST COAST OF INDIA

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**Abstract:** This paper records the first report of the Winged Thecacera, *Thecacera pennigera* from southwest coast of India and discusses the possible mode of its spread in Indian coastal waters.

**Keywords:** Invasive species, Winged Thecacera, Bryozoa, *Bugula*, Kerala

## INTRODUCTION

The Winged Thecacera *Thecacera pennigera* is originally described from the south coast of Devonshire, United Kingdom (Montagu, 1813). Hayward *et al.* (1990), Seaward (1990) and Thompson (1988) recorded the occurrence of this species from European waters, Willan (1976) from New Zealand waters, Willan and Coleman (1984) from Australian waters, Gosliner (1987) from southern African region, Sweenen (1961) and Dekker (1986) from Netherland waters and Valles *et al.* (2000) from Britain, the Netherlands, France, Sicily, South Africa, Pakistan, Japan, Australia, New Zealand and Brazilian waters. From India this species was first reported by Bhawe and Apte (2011) from Ratnagiri coast. Apte (2012) recorded the occurrence of this species from Indian waters, but did not mention the locality. This paper records the occurrence of *T. pennigera* from southwest coast of India.

Two live specimens (length 14-19 mm, width 7-11 mm) were collected from the rocky regions of Chompal (11°39'43.6"N; 75°32'51.5"E), Kerala by

hand picking at low tide on 27 December 2014. The animals were associated with the bryozoan *Bugula neritina* (Linnaeus, 1758). The material was identified following descriptions provided by Hayward *et al.* (1990), Seaward (1990), Thompson (1988), Valles *et al.* (2000), Bhawe and Apte (2011) and Apte (2012).

### Systematics

Phylum: Mollusca

Class: Gastropoda

Order: Nudibranchia

Superfamily: Polyceroidea

Family: Polyceridae

Genus: *Thecacera* Fleming, 1828

***Thecacera pennigera* (Montagu, 1813)** (Fig. 1)

**Description:** The animal is small and translucent white with small orange, yellow and black to blue-black spots or flecks. The black spots are often smaller than the orange blotches. Head blunt and broad with two lateral extensions and paired rhinophores; rhinophore sheath incomplete. The broad anterior of the body tapers posteriorly to a long, slender foot.



**Fig. 1.** *Thecacera pennigera* (Montagu, 1813)

Gills 3-5 bipinnate or tripinnate, white with orange and black spots. A pair of club-like, dorso-lateral, glandular defensive ceratal processes located behind the gills. The front of the foot is produced into anterolateral points, the propodial tentacles. Oral tentacles absent.

**Remarks:** Though original records and description of this species are from the Atlantic coast of Europe (Montagu, 1815), it is now considered as a cosmopolitan species, with records from South and West Africa, Brazil, Japan, Korea, India, Pakistan, Australia and New Zealand (Valles *et al.*, 2000). This carnivorous slug has shown a strong association with bryozoans such as *Bugula* and the bryozoans serve as refuge, substratum for egg deposition, and food source for the slug (Willan and Coleman, 1984; Dekker, 1986). We have recorded this species in association with the bryozoan *Bugula neritina*. This kind of strong association of slug and bryozoan might have facilitated human-facilitated spread of the species, possibly as egg masses deposited on ship hull fouling *Bugula* species (Willan, 1976), and spread of both *T. pennigera* and *B. neritina* in Indian coastal waters as well. This is the first record of *Thecacera pennigera* in southwest coast of India.

## REFERENCES

- Bhave, V. and Apte, D. 2011. Opisthobranch fauna of Ratnagiri, Maharashtra, India with 8 new records to India. *J. Bombay Nat. Hist. Soc.*, 108(3): 172-182.
- Dekker, R. 1986. Second record of *Thecacera pennigera* (Gastropoda, Opisthobranchia) from the Dutch coast. *Basteria*, 50: 45-46.
- Gosliner, T. 1987. *Nudibranchs of southern Africa, a Guide to Opisthobranch Molluscs of Southern Africa*. Sea Challengers, California, 136pp.
- Hayward, P.J., Wigham, G.D. and Yonow, N. 1990. Mollusca I: Polyplacophora, Scaphopoda, and Gastropoda. In: *The Marine Fauna of the British Isles and North-West Europe* (P.J. Hayward & J.S. Ryland, eds.). Clarendon Press, Oxford, pp. 628-730.
- Montagu, G. 1815. Descriptions of several new or rare animals, principally marine, discovered on the South Coast of Devonshire. *Trans. Linn. Soc. London*, 11: 1-26.
- Seaward, D.R. 1990. Distribution of the marine molluscs of North West Europe. Joint Nature Conservation Committee, Peterborough, United Kingdom, 114pp.
- Spencer, H.G., Marshall, B.A. and Willan, R.C. 2009. Checklist of New Zealand living Mollusca. In: New Zealand inventory of biodiversity. Vol. I. Kingdom Animalia: Radiata, Lophotrochozoa, Deuterostomia (D.P. Gordon, ed.). Canterbury University Press,

- Christchurch, pp. 196-219.
- Sweenen, C. 1961. Data on distribution, reproduction and ecology of the nudibranchiate molluscs occurring in the Netherlands. *Netherlands Journal of Sea Research*, 1: 191-240.
- Thompson, T.E. 1988. Molluscs: Benthic Opisthobranchs (Mollusca: Gastropoda). *Synopses of the British fauna (NS)*, 8: 1-356.
- Valles, Y., Valdes, A. and Ortea, J. 2000. On the phanerobranch dorids of Angola (Mollusca, Nudibranchia): a crossroads of temperate and tropical species. *Zoosystema*, 22(1): 15-31.
- Willan, R.C. 1976. The opisthobranch *Thecacera pennigera* (Montagu) in New Zealand, with a discussion of the genus. *Veliger*, 18: 347-352.
- Willan, R.C. 1976. The opisthobranch *Thecacera pennigera* (Montagu) in New Zealand, with a discussion of the genus. *Veliger*, 18: 347-352.
- Willan, R.C. and Coleman, N. 1984. *Nudibranchs of Australasia*. Australasian Marine Photographic Index, Sydney, 56pp.

