



Note

First report on two species of ascidians to represent the genus *Botryllus* Gaertner, 1774 from Indian waters

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Abstract

Colonial ascidians belonging to the genus *Botryllus* Gaertner, 1774 is new to Indian waters. Two species *Botryllus purpureus* (Oka, 1932) and *B. schlosseri* (Pallas, 1766) are reported.

Keywords: Colonial ascidian, *Botryllus*, new record

Taxonomical work on ascidians in India is very meagre. Only 27 genera of ascidians have been reported so far from India (Oka, 1915; Das, 1936, 1938, 1945; Sebastian, 1952, 1955, 1956; Renganathan, 1981a, 1981b, 1982, 1984a, 1984b, 1984c, 1986a, 1986b; Renganathan and Krishnaswamy, 1985; Renganathan and Monniot, 1984; Meenakshi and Renganathan, 1997; Meenakshi, 1998, 2000). Ascidians belonging to the genus *Botryllus* Gaertner, 1774 has not been so far reported from Indian waters. With the occurrence of *Botryllus purpureus* (Oka, 1932) and *Botryllus schlosseri* (Pallas, 1766) reported for the first time, here, the total number of genera from Indian waters would be 28.

Systematics : Class: Ascidiacea; Order: Pleurogona; Suborder: Stolidobranchia; Family: Styelidae; Subfamily: Botryllinae; Genus: *Botryllus*.

Botryllus purpureus (Oka, 1932) (Fig. 1)

Synonymy see Kott, 1985, p.267.

Occurrence: Many colonies were collected from the intertidal rocky areas, coral growth of Tuticorin Harbour and from the trawl discards of Perumanal – a fish-landing centre of Tirunelveli Coast.

Distribution: Japan, Western Australia, India.

External appearance: Colonies form large irregular investing sheets on the substratum. Test very thin and transparent with sand particles embedded in it and distributed on the surface. Zooids and terminal ampullae of test vessels inconspicuous. Circular system of arrangement of zooids observed. Colour: brown, purple or pink in live condition.

Internal structure: Zooids measure about 1 mm in length. Branchial aperture terminal with a smooth round

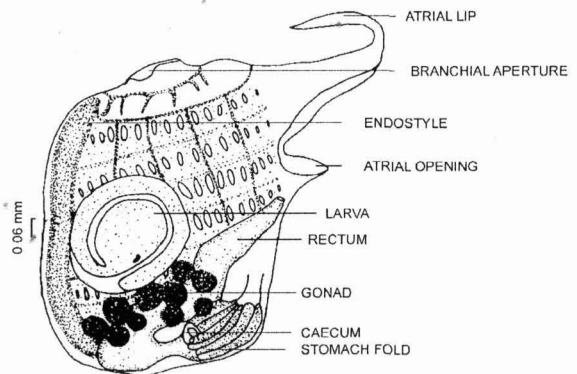


Fig. 1. *Botryllus purpureus* zooid

border. Atrial aperture narrow (Fig. 1). Upper border of atrial opening produced into a large atrial lip. Pigment cells lie scattered on the body wall. 10 branchial tentacles. Branchial sac has 7 rows of stigmata with 14-16 stigmata per row. Gut forms a simple loop across the posterior end of the left side of the body. Stomach small, barrel shaped or spherical with 8 conspicuous folds. Caecum long, curved and swollen at the tip. Anus opens at the level of the fourth row, atrial aperture between the second and fourth row of stigmata. Gonads one on each side of the body. Testis formed of ten spherical follicles.

Remarks: Indian specimen resembles the description of *Psammobotryllus purpureus* Oka, 1932 and *Botryllus purpureus* Kott, 1985 in all features except for the presence of spherical testis follicles compared to pyriform follicles in the Japanese specimen described by Oka. In the Australian specimen described by Kott (1985) no gonads were detected. This species is characterised by the presence of sand embedded in the test, inconspicuous

terminal ampullae, 7 rows of stigmata and 14 to 16 stigmata per row.

Botryllus schlosseri (Pallas, 1766) (Fig.2)

Synonymy see Kott, 1985, p. 267.

Occurrence: Prefers a wide variety of habitat. Large fleshy colonies were collected from the intertidal rocky areas of Tuticorin and Vizhinjam harbour. Their presence was also observed in the trawl discards, chank beds off Vellapatti, Mandapam and Vizhinjam. Their occurrence as fouling organisms were observed from the harbour installations of Vizhinjam, the pearl oyster cages of Mandapam and the hulls of ships hauled for dry docking in Chennai.

Distribution: Australia, Hong Kong, New Zealand, Atlantic Coast of North America, Europe, Norway, Great Britain, Western France to Mediterranean, Adriatic, Black Sea, India.

External appearance: Colonies investing sheets or fleshy lobes. Test very thin and soft. Zooids arranged in circular to elongate, often crowded systems. Common cloacal openings circular to elongate. Terminal ampullae of test vessels conspicuous, crowded in between the systems and in the border of the colony. Living colonies purple brown in colour.

Internal structure: Zooids 1-2 mm long. Branchial aperture terminal with a smooth border (Fig. 2). Atrial aperture small, upper border produced into a large pointed atrial lip. 12 branchial tentacles. Branchial sac with 9-12 rows of stigmata. 20-24 stigmata per row. Stomach short, spherical or barrel shaped with 11 folds. Caecum

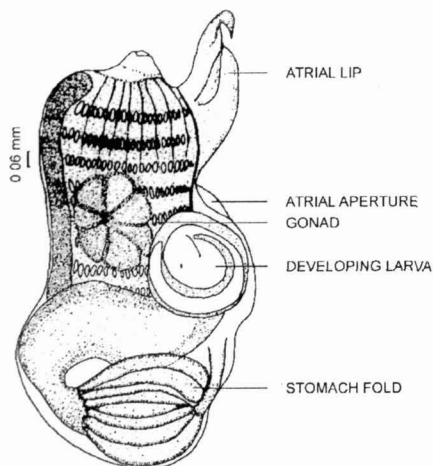


Fig. 2. *Botryllus schlosseri* zooid showing developing larva

'L'-shaped with a knob like tip. Gastrointestinal connective present. Anus opens between the sixth and seventh row of stigmata. Gonads one on each side of the body, consisting of a rosette of 7-9 testis follicles and two or three large ova.

Remarks: The present species agrees with the description of *Botryllus schlosseri*, Kott, 1985 in all respects. The characteristics of the species are small atrial aperture with an atrial lip, spherical stomach, 'L' shaped caecum with a knob like tip and the testis consisting of a rosette of follicles. This species differs from *Botryllus purpureus*, in the absence of sand particles embedded in the test, presence of conspicuous crowded terminal ampullae in the test, more number of stigmata per row and rosette shaped male follicles.

Key to the species of *Botryllus* recorded from India

Presence of sand in the test, inconspicuous terminal ampullae of test vessels, lesser number of rows of stigmata (7) number per row (14-16) and scattered spherical male follicles *B. purpureus*

No sand in the test, conspicuous terminal ampullae of test vessels, more number of rows of stigmata (9-12) number per row (20-24) and rosette shaped male follicles *B. schlosseri*

Botryllus purpureus (Reg. No. AS704, AS1254) and *Botryllus schlosseri* (Reg. No. AS265, AS523, AS533) have been deposited in the Museum, Department of Zoology, A.P.C. Mahalaxmi College for Women, Tuticorin.

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