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Record of the rare triseriate auger *Triplostephanus triseriatus* (Gray, 1834) with notes on its distribution along the Indian coast

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Abstract
The rare triseriate auger shell *Triplostephanus triseriatus* (Gray, 1834) is reported from Chennai and is only the fourth report to Indian waters. Shell is extremely elongated, very narrow and sculptured. Spiral ridge is round beaded/ noded in the upper part with whorls of two rows of large beads/nodes and a single row small rounded bead/node at the lower part. Columella yellowish orange in colour. The shell description, characteristics, and information on its earlier records are dealt in detail.

Keywords: Triseriate auger, Gastropoda, Terebridae, Chennai, *Triplostephanus triseriatus*

Introduction
The triseriate auger shells are rare [1], placed under the family Terebridae. Shell is characterized by the presence of three round beaded spiral ridges (two rows of large beads in the upper part and a single row of small rounded beads in the lower part) Fig.1. While triseriate auger has its distribution in the Indian Ocean [2], dredged samples have been collected and reported from the Pacific Ocean. The triseriate auger prefers habitats of coral and fine sand with clay. Only three reports exist for this species from Indian waters of which five specimens collected from Andaman [3] of the R.I.M.S Investigator (Royal Indian Marine Survey ship) collections (1884-1926). Besides its rarity, it is a priced collectible for shell traders and conchologists. The taxonomic position, description of the shell characteristics and information pertaining to its distribution in Indian waters are discussed. The aim of this paper is to bring out the historical records of the triseriate auger in India.

Materials and Methods
The triseriate auger shell was collected from dumped trash fish disposed off by bottom trawlers at Kasimedu fishing harbour, Chennai (13°7'29.40" N, 80°17'46.40" E) (Fig.2). Since the shell lacked animal inside, it was thoroughly washed with running water and dried. The species was identified based on Pinn [1] and Venkitesan and Mukherjee [3]. The specimen was deposited at the Marine Biology Regional Centre, Zoological Survey of India (Regd. No: MBRC/M.1756).

Systematics
GASTROPODA Cuvier, 1795
CAENOGASTROPODA Cox, 1960
NEOGASTROPODA Wenz, 1938
TEREBRIDAE Morch, 1852
Genus *Triplostephanus* Dall, 1908
Species *T. triseriatus* Gray, 1834
1834 *Terebra triseriata* Gray, Proc. Zool. Soc. Lond. Pt 2:62; 1844 Hinds in Sowerby, Thes. Conch. 1:171, pl.35. fig. 119; 1885 Tryon, Man. of Conch., VII., p.30, pl.ix., figs.56.57; Cenohorsky, Mar. Shells Pacific 1:206, pl. 52. Fig. 389; 1972 Hinton, Shells New Guinea Cent. Pacific p. 46, pl. 23, fig. 34' 1974 Dance, Encycl. Shells, p. 219, upper gig., right column; 1978 Hinton, Guide Austral. Shells p. 403; 1982 Abbot & Dance, Compendium of

Seashells p. 274; 1984 Aubry, Terebridae pl.1; 1990 Pinn, Sea shells of Pondicherry, Nehru Science Centre, p. 109, fig.199; 1995 Bosch, Sea Shell of Eastern Arabia No. 774 p. 172.
1859 *Terebra praelonga* Deshayes, Proc. Zool. Soc. Lond., pt. 27:315.
1963 *Terebra (Triplostephanus) triseriata* Gray, Shikama, Sel. Shells World Col. 1:126, pl. 102, fig. 10; 1966 Cernohorsky Jennings, Veliger 9(1):57, pl.4, fig. 14.
1966 *Triplostephanus triseriata* Gray, Habe & Kosuge, Shells World Color 2:100, pl. 3, fig. 21.
1967 *Triplostephanus triseriatus* (Gray), Habe & Kosuge, Stand. Book Jap. Shells Color 3:101, pl. 40, fig. 11.

Diagnosis

Shell length 81 mm – apex broken, width 12 mm; aperture length 16mm; aperture width 6mm; Solid and glossy shell with small, short aperture. Extremely elongated, very narrow and heavily sculptured shell. Spiral ridge is round beaded/ noded upper part with whorls of two rows of large beads/nodes and a single row small rounded bead/node part (Fig.1.). Protoconch missing (usually broken in the most reported specimen); Body whorl angulate, spirally corded (4-6), peripheral cords very prominent and beaded, third of body whorl spirally striate. Faint acruate growth lines or axial grooves, the spiral cord is beaded but not prominent. Columella yellowish orange in colour.

Fig 1: Tri-seriate auger shell *Triplostephanus triseriatus* and a closer view of the 3 bead-like arrangement on the whorls

Fig 2: Map of Kasimedu fish landing centre, Chennai

Discussion

The triseriate auger *T. triseriatus* is a rare Terebrid gastropod inhabiting the Indo-Pacific region. The shell length from Indian reports ranges between 45 – 81 mm, the largest being reported in this study. Pinn [1] in his work has alerted that this species could almost be mistaken for *T. babylonia* but, can be differentiated by the two distinct wider ridges. He also adds on to say the shell is beautiful and 'very rare'. This is only the fourth report of *T. triseriatus* from Indian waters including the Andaman collection of R.I.M.S. investigator that is documented in Zoological Survey of India (Kolkatta), Standen and Leicester [4] from the Gulf of Mannar during the pearl oyster surveys and by Pinn [1] in Pondicherry. The Gulf of Mannar report evidently points out the collection site as - off Galle, Trincomalee, Sri Lanka. This reference is also mentioned in the inventory work carried out by Hylleberg and Kilburn [5]. The recent most report on this species was brought forth by Venkitesan and Mukherjee [3], enlisting the entire Terebridae collections from the ZSI Museum repository without mentioning the collection dates. The collections are to be that of the surveys carried out by R.I.M.S Investigator between 1884 and 1926. Moreover, both Pinn [1] and Venkitesan and Mukherjee [3] have used the genus name as *Terebra* while, genus *Triplostephanus* was used by Habe and Kosuge in 1966 itself and is also the accepted name. There is also an emendation in the species name where *triseriatus* is written as *triseriata.* Though the triseriate auger shell is widely distributed in the Indo-Pacific region, it still remains to be a very rare collectible among conchologists around the globe.

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