NEW PHYSONECTAE, *FRILLAGALMA VITYAZI* GEN. NOV., SP. NOV. (SIPHONOPHORA: COELENTERATA) FROM THE INDIAN OCEAN.

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In the course of a detailed systematic study of the Siphonophores collected in the 35th cruise of the R.V. " Vityaz " from the Indian Ocean, four nectophores, with frilled ridges were observed. Since these characteristic nectophores are quite distinct from those of the species of all known genera of the suborder Physonectae.it is described as *Frillagalma vityazi* gen.nov., sp. nov.

Frillagalma gen. nov.

Nectophores with well flared-out and frilled ridges.

Frillagalma vityazi sp. nov. (Text-figs. 1–5.)

Material: Three mature and one juvenile nectorphores from " Vityaz " stn. No. 5212 (Lat. 05° 11′ S. and Long. 91° 15′ E.) by Indian Ocean Standard net haul from 200–0 m.; A. Daniel, Coll. 2.ix.1962.

Temperature range: 12·54°–27·87° c.

Salinity range: 34·38–35·18°/$_{00}$.

Diagnosis: Nectophores small and transparent. All ridges flared and frilled; dorso-lateral ridges continuous on ventral side, connected by lateral vertical ridges and bifurcate forming dorso-lateral corners of mouth of nectosac. Two pairs of very small fluted ridges occur on the dorso-lateral ridges. Nectosac large, rounded, transparent, with straight unlooped lateral radial canals and broad mouth opening.

Length: 3·7–4·8 mm.

Breadth: 3·5–4·5 mm.

Description: The nectophores are well preserved, small, delicate and transparent. All ridges are prominent, flared out and frilled or fluted in appearance (text-figs. 1 and 2, d.l.r.). There are two dorso-lateral ridges on either side of a longitudinal median groove.

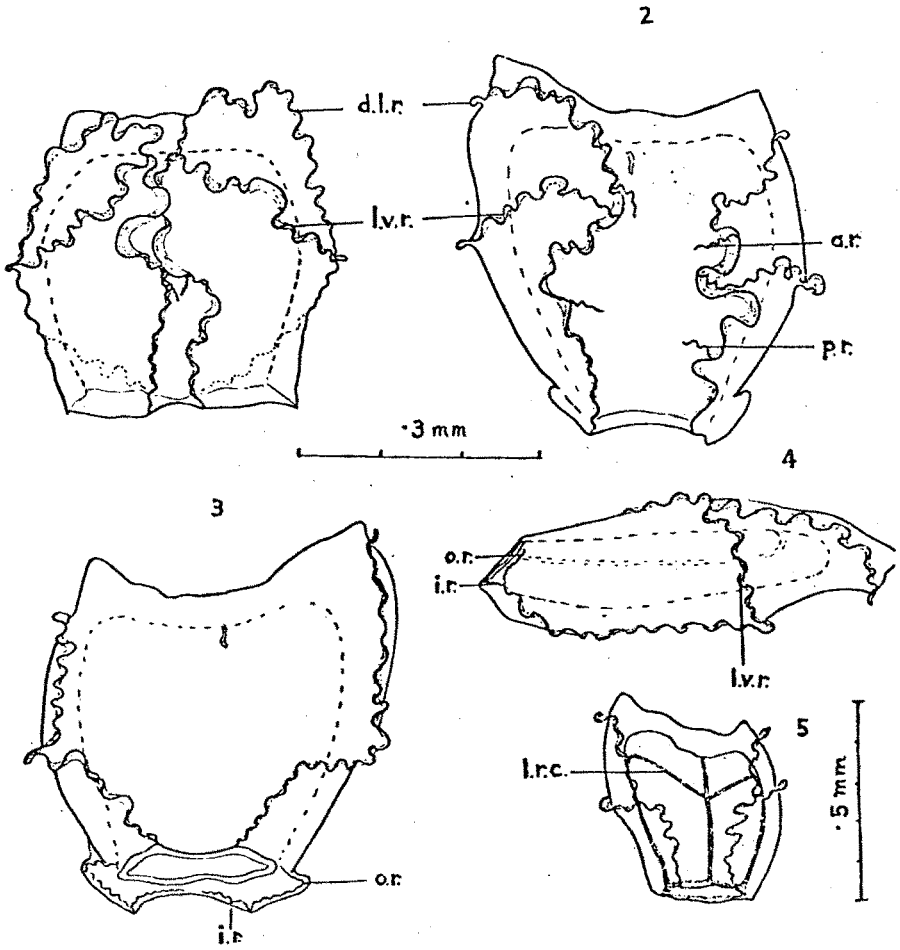
In the single young nectophore this median groove is very narrow and the dorso-lateral ridges occur close together with their frilled edges overlapping (text-fig. 1, d.l.r.). These ridges form facets on the dorsal side itself and do not extend to the ventral side as in the other three nectophores.

In the other three nectophores the central groove is broader and the frilled dorso-lateral ridges are separated. These ridges run from a point just below the apex of the nectophore down to the mouth of the nectosac where they bifurcate into an inner and an outer branch (text-figs. 3 and 4 i.r., o.r.). These branches form the dorso-lateral corners of the mouth

of the nectosac. The inner branch from each dorso-lateral ridge does not meet the fellow on the dorsal side but terminate close together as shown in text-fig. 3, i.r. The course of these branches are clearly seen by viewing the nectophore with the oral end uppermost.

Besides these ridges, there are four very short ridges (also frilled in appearance) which arise from the dorso-lateral ridges (text-fig. 2, a.r., p.r.). These are directed towards the central groove. The anterior pair of ridges are hidden between the frills and the frilled edges have to be flattened with a brush to see them clearly.

Figs. 1–5.



1, Young nectophore—dorsal view; 2–5, Mature nectophore—2, dorsal view; 3, ventral view; 4, lateral view; 5, nectophore stained with borax-carmine to show nectosac and canals. a.r.—anterior ridge; d.l.r.—dorso lateral ridge; i.r.—inner branch; l.r.c.—lateral radial canal; l.v.r.—lateral vertical ridge; o.r. outer branch; p.r.—posterior ridge.

The dorso-lateral ridges continue on the ventral side and terminate at the mouth of the nectosac forming two irregularly shaped dorso-lateral facets (text-figs. 3 and 4). Each facet is divided into two by a lateral vertical ridge (text-fig. 4, l.v.r.). The ventral side of the nectophore is also grooved as on the dorsal side but it is much shallower.

The nectosac is large and rounded. The mouth of the nectosac which is broad, oval or quadrilateral in shape, is directed slightly towards the ventral side. The musculature and the lateral radial canals are clearly seen only after staining with diluted borax-carmine. The lateral radial canals are simple, straight and unlooped. The curvature of these canals lies below the apex of the nectosac (text-fig. 5, l.r.c.).

TYPE MATERIAL: In the collection of the Zoological Survey of India, Calcutta, India.

HOLOTYPE: Z. S. 1. Regd. No. P. 1807/1.

PARATYPES: Z. S. 1. Regd. No. P. 1808/1.

REMARKS: Of the six families included in the suborder Physonectae Haeckel, 1888 (Athorybiadae Huxley, 1859; Physophoridae Eschscholtz, 1829; Agalmidae Brandt, 1835; Forskalidae Haeckel, 1888; Apolemidae Huxley, 1859 and Rhodalidae Haeckel, 1888), the present new species resembles the nectophores of Agalmidae to a certain extent. The nectophores of Agalmidae possess ridges and the lateral radial canals are either straight or looped. A comparison of the present nectophores with those of the valid species included in this family (*Stephanomia amphitridis* Lesueur and Petit, 1807; *Stephanomia cupulifera* Lens and van Riemsdijk 1908; *Stephanomia rubra* Vogt, 1852; *Stephanomia convoluta* Moser, 1925; *Anthemodes ordinata* Haeckel, 1888; *Nanomia cara* Agassiz, 1865a; *Nanomia bijuga* Delle Chiaje, 1841; *Lychnagalma vesicularia* Haeckel, 1888; *Marrus orthocanna* Kramp, 1942; *Marrus orthocannoides* Totton, 1954; *Marrus antarcticus* Totton 1954; *Agalma okeni* Eschscholtz, 1825; *Agalma elegans* (Sars) 1846 and *Pyrostephos vanhoeffeni* Moser, 1925) shows that in the presence of the dorso-lateral ridges and lateral vertical ridges, these resemble *Stephanomia*, *Nanomia* and *Agalma* but in these the lateral radial canals are looped. In the bifureated nature of the dorso-lateral ridges these resemble *Marrus* but the position of the bifurcation and the course of the branches are different. Further, lateral vertical ridges are lacking in *Marrus*.

Cordagalma cordiformis Totton (1932) and *Bargmannia elongata* Totton (1954) are known only from their nectophores like the present new species and the entire colony is still unknown. Their exact systematic position is not clear though these have been assigned to the family Agalmidae (Totton 1954; Leloup 1955). The present nectophores by the possession of simple, unlooped lateral radial canals resemble *Cordagalma*, *Bargmannia* and *Marrus*. As in *Cordagalma* the curvature of the lateral radial canals lies below the apex of the nectosac.

Due to the presence of the unique well flared out and frilled ridges, they have been made the type of a new genus *Frillagalma*.

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