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Some Cyclostome (Bryozoa) from Maastrichtian Kallankurichchi Formation, Ariyalur Group, South India

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Abstract

Systematic study of nine species of cyclostome bryozoan has been done from the Maastrichtian sediments of Kallankurichi Formation, Ariyalur Group, Cauvery Basin, South India. Among these *Idmidronea sastreii n. sp.* is new to science. Four species namely, *Ybselosoecia* sp., *Spiropora* sp., *Tayloripora* sp. and *Exidmonea* sp. are kept in open nomenclature and rests are already described from these deposits. These species are belonging to families Diaperoeciidae, Entalophoridae, Plagiociidae, Spiroridae, Stomatopridae and Tubuliporidae. These species are, *Mecynoecia cf. virgula*, *Mesenteripora cf. corrugata*, *Proboscinopora cf. bassleri*, and *Exidmonea robusta*.

Keywords: Bryozoa, Carbonate sediments, Cyclostome, Kallankurichi, Maastrichtian, South India.

Introduction

The Kallankurichchi Formation belongs to the Ariyalur Group, South of Maastrichtian age India (Fig. 1; Guha and Nathan, 1996) containing rich and diverse mega and micro invertebrate fossil record (Sastry *et al*., 1972; Ayyasami, 2006). The beds of fossiliferous limestone exposed as detached outcrops (Guha and Nathan, 1990; Ramkumar, 2004) with a general N-S trend, gently dipping towards east, about 25-35 km long and 500 and 3500 m. thick. The occurrence of fossil bryozoans in the carbonate sediments of Ariyalur Group was first reported by Stoliczka (1873). Guha and Nathan (1990; 1996) have further studied fossil Bryozoa from these sediments.

The present paper describes eleven species of Cyclostomatid Bryozoa belonging to families Diaperoeciidae Canu, 1918; Entalophoridae Reuss, 1869; Plagiociidae Canu, 1918; Spiroridae Voigt, 1968; Stomatopridae Pergens and Meunier, 1886 and Tubuliporidae Johnston, 1838 from the Kallankurichi Formation. These species are *Ybselosoecia* sp., *Spiropora* sp., *Tayloripora* sp. and *Exidmonea* sp., *Mecynoecia cf. virgula* (Hagenow), *Mesenteripora cf. corrugata* Guha and Nathan, *Proboscinopora cf. bassleri* Guha and Nathan, *Idmidronea sastreii n. sp.* and *Exidmonea robusta* (Brood).

Material and Methods

The centre of attention of this study is the abundant bryozoan component (Table 1). For this study fragments of limestone (*c*. 1 Kg) were separated and collected from the different sites of Kallankurichchi Formation (Fig. 2). Approximately, 300 grams of each sample was soaked with 50% concentrated H_2O_2 for 48-72 hours followed by sieve analysis using the standard mesh sizes of 1.68–0.25 mm. Colonies and internodes of bryozoans were picked up for the identification. The colonies were cleaned with Na_2SO_4 solution in an ultrasonic bath for 4 to 5 cycles. Uncoated specimens were photographed with the help of ZEISS evo ma15 SEM at the Agharkar Research Institute, Pune. Measurements were taken from SEM photographs with the help of ImageJ software. Cyclostome bryozoan classification used in the systematic part of this paper follows the World Register of Marine Species (WoRMS, 2023) and bryozoa.net.

Table 1: Lithostratigraphy of the Campanian–Maastrichtian strata, Cauvery Basin, southern India (*modified after* Sonar *et al.*, 2022)

	Age	Formation	Member	Thickness (m)
Ariyalur Group	KTB	~~~~~~~~~~ Unconformity ~~~~~~~~~~		100
		Kallamedu		
		~~ Unconformity ~~~~~~~~~~		40
		Ottakovil		
	Maastrichtian	~~~~~~~~~~ Unconformity ~~~~~~~~~~		
		Kallankurichchi	Srinivaspuram gryphean limestone member	18
			Tancem biostromal member	08
			Kattupiringiyam inoceramus limestone member	08
			Kallar Arenaceous member	06
		~~ Unconformity ~~~~~~~~~~		
	Campanian	Sillakudi		400

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