Physical Research Laboratory

Tuesday Seminar

Oxygen and Carbon Isotopic Composition of the Living Symbiont bearing Benthic Foraminifera from different regions of the Andaman Reefs

Abstract

Benthic foraminifera which hosts algal endosymbionts, grow to larger sizes than most other benthic protozoans and are often informally referred to as Larger Benthic Foraminifera (LBF). The LBF are important calcifiers, contributing substantially to reef sediments and carbon sequestration. The LBF grow slowly over periods of months to an year or more to reach diameters usually in excess of 1 mm and commonly >1 cm. They are long lived compared to most other shallow-dwelling foraminifera. Because they host symbiotic algae, they generally require very clear water conditions, especially those living at depths >20 m. With suitable light intensities and limited availability of dissolved inorganic nutrients (e.g., ammonia, nitrite, nitrate and phosphate), the photosynthetic algal symbionts can produce far more photosynthate (i.e., simple sugars and lipids) than inorganic nutrients available to allow algal growth. Instead, the algae excrete their excess photosynthate to the host, providing the host with energy for calcification and feeding, and the latter provides essential nutrients for growth of host and the algae. All these physiological process are generally not observed in the smaller benthic and planktonic foraminifers. The stable oxygen and carbon isotopic composition ($\delta^{18}O$ and $\delta^{13}C$) of different species of live symbiont bearing larger benthic foraminifera from different reef areas of Andaman Islands have been analysed. Processes regulating the isotopic composition of these LBF would be discussed in my presentation.

Speaker

Dr. M. Muruganantham

PDF, GSDN

Date	Time	Venue
15-October-2019	16:00 hrs	Ground Floor Lecture Hall

All are invited to attend and participate in discussion

Tea at 15:30 Hrs

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