

## **DECLARATION**

I declare that the thesis entitled “**SYSTEMATICS, DISTRIBUTION, ECOLOGY AND SHELL CHEMISTRY OF RECENT BENTHIC OSTRACODA, OFF RAMESWARAM, GULF OF MANNAR, SOUTHEAST COAST OF INDIA**” submitted by me for the degree of Doctor of Philosophy (Ph.D.) is the record of work carried out by me during the period from March 2007 to July 2014 under the guidance of **Dr. S.G.D. SRIDHAR**, Assistant Professor, Department of Applied Geology, University of Madras, Guindy Campus, Chennai 600 025 and has not formed the basis for the award of any Degree, Diploma, Associateship, Fellowship, Titles in this University or any other University or other similar institution of Higher Learning.

**Signature of the Candidate  
(T. SIVAKUMAR)**

Date: 10.07.2014  
Place: Chennai

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## ABSTRACT

The area under present investigation is a tropical region situated south off Rameswaram island, in the Gulf of Mannar, Southeast coast of India. The region is a shallow inner shelf, with a topography having gentle slope towards the sea. An extensive fieldwork was carried out quadruple a year representing Northeast monsoon, Winter, Summer and Southwest monsoon seasons, from September 2010 to August 2011, three months once. The present study is taken up with the objective of presenting Systematics, Distribution and Ecology of recent benthic Ostracoda. Their population is being correlated with the observed environmental parameters. Their Shell chemistry is discussed in detail. The present investigation forms a new data.

All the collected samples were processed in the laboratory at Department of Applied Geology, University of Madras, for the Ostracod faunal studies using standard micro-paleontological techniques. Various physicochemical parameters were determined with the following objectives 1) to study the seasonal variations in hydrography and nutrient contents and, 2) to find out the spatial variation in physicochemical properties, namely, Salinity, pH, turbidity, suspended particulate matter, nitrate, ammonia, total nitrogen, silicate, phosphate and total phosphorous.

In the present study, the widely used classification proposed by Hartmann and Puri (1974) is followed. A total of 63 Ostracoda species are identified and classified as follows: 63 species belonging to 45 genera, 20 families, 4 super families, 2 suborders that represent order PODOCOPIDA. Among these, 6 species belong to the suborder PLATYCOPA and the remaining 57 species belong to the suborder PODOCOPA. For each species, the living and total population for four different seasons in a year are given.

Spatial and seasonal distribution of the benthic Ostracoda and Ecology of the widespread and abundant species are given. Shell chemistry of all the identified 63 species are presented. The shell chemistry of species that occur as “abundant and widespread” are discussed. Shell chemistry of species according to their family is discussed in detail and their source is being identified.