



## Data Article

Data on *Molluscan Shells* in parts of Nellore Coast, southeast coast of India

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## ABSTRACT

X-ray diffraction (XRD), Scanning Electron Microscope-Energy Dispersive Spectroscopy (SEM-EDS), and Fourier Transform Infrared Spectroscopy (FT-IR), were applied to analyze the organic matrix of two *Molluscan shells*. The *Mollusca shells* are mineral structure and calcium carbonate crystallized as aragonite. The FT-IR spectra showed Alkyl Halide, Alkanes, Alcohols, Amides, Aromatic, and Hydroxyl groups in the organic matrix of the whole (organic and mineral) *Molluscan shells*. SEM images of particles of the two *Molluscan shells* at different magnifications were taken. The morphologies of the samples show a flake like structures with irregular grains, their sizes are at micrometric scale and the chemical analysis of EDS indicated that the major elements of *Cardita* and *Gastropoda* were C, O, and Ca, consistent with the results of XRD analysis. The results of the analysis of the EDS spectra of the shells showed that the content of most of the powder composition of shells is the element carbon, calcium oxygen, aluminium, and lead peaks that appear on the *Cardita* and *Gastropoda* and shells powders tap EDS spectra. The present work examined organic matrix of the selected shells of the heavily polluted and light polluted sites, along Nellore Coast, South East Coast of India. The heavily polluted sites have significantly thickened shells. The data demonstrated the sensitivity of this abundant and widely distributed intertidal fragile environment.

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Specifications Table

S.No	Subject area	Palaeontology
1	More specific subject area	Palaeontology
2	Type of data	XRD, EDS-SEM, FTIR
3	How data was acquired	Experimental
4	Data format	Analysed
5	Experimental factors	<i>Cardita</i> and <i>Gastropod</i> Shells
6	Experimental features	Heavy pollution, light pollution and Non-polluting
7	Data source location	Nellore Coast
8	Data accessibility	The Data Available with this article

Value of the data

- Spectroscopy (X-ray Diffraction (XRD), Fourier transforms Infrared (FTIR)), Scanning Electron Microscope (SEM) and Energy Dispersive Spectroscopy (EDS) were utilized to study the variations in organic groups and elements present in the *Cardita* and *Gastropoda* (*Mollusca* shells).
- Examined malformations among the selected shells of the heavily pollution, light pollution and Non-polluted sites in Nellore coast.
- Data on shell shape, thickness, dry weight, microstructure and semi-quantitative elemental composition was evaluated.

1. Data

*Mollusc shells* sometimes include associate degree outer sclerotized macromolecule layer known as periostracum and inner calcified layers. Besides, a hinge system is a gift in *Molluscan* that joins the 2 shells at their dorsal margins. In most prosobranchs, associate degree organic or calcified plate is a gift on the dorsal surface of the met podium of the foot. Polyplacophorans (chitons) disagree from the opposite *Molluscan* categories therein the onerous components consisting of eight shell plates lined by skinny organic material, and spines lined by a cuticle substance [1,2]. The phylum shell formation emphasizes the physiological method [3]. The Broad-Ribbed *Cardita* could be mistaken for associate degree bivalve (Family *Arcidae*). The adult bivalve is roughly 1½ inches long. The shell is durable, bluffly oval, and has concerning 20 strong diverging ribs. The ribs area unit wide, scaly, and have auburn spots scattered over them in somewhat homocentric bands. The background color of the shell is white, grayish, *Carditas* could have lost their markings. Recent specimens sport a gray periostracum. The within of this sort of clam shell is porcelain-white. The gumbo, of the shell, is giant and is settled a few fourth of the approach from the rounded front of the shell. The correct valve of the claim contains a giant central tooth, and therefore the left valve contains a smaller central tooth. The lunule, the world ahead of the convexity, is depressed and formed sort of a plump Valentine. There's a slim, external ligament that connects the 2 valves. The *Gastropoda* includes most *Molluscs*', as many as 60,000 existing species and 50,000 fossil forms. The gastropods have associate degree unsymmetrically spiral shell that functions as a conveyable retreat. The body of *Gastropoda* is generally composed of a head, foot, visceral hump, and mantle. Visceral organs show well-organized options including cardiovascular system, an organic process and emission system, and a genital system. Each sexual and hermaphroditic copy area unit found among the varied species and families. The crystallization method of shell by calcium carbonate is considered to be a long progressive activity that depends mainly on several a intrinsic and environmental factors. The fabric of shells is usually being a carbonate. Shell tubules area unit microscopic canals within the shells of varied *Molluscs*. In fissure lid gastropods, the canals type by shell growth around cellular extensions of the mantle epithelial tissue (caeca). Being associate degree edible clam, the *Cardita* and *Gastropoda* area unit sought-after out by

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