ON THE OCCURRENCE OF A FOSSIL *JANTHINA* ROEDING (GASTROPODA: PROSOBRANCHIATA) FROM ANDAMAN ISLANDS (INDIA)

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THE genus *Janthina* Roeding has not so far been reported in fossil state from India. A specimen of this genus belonging to a hitherto undescribed species was collected and is described in this paper.

The extant species of the genus *Janthina* are diagnosed as follows. The shells are usually thin and fragile with low spire and large body whorl which may be smooth or striated. The aperture may be oval or squarish in outline with an angular columella. The umbilicus, operculum and penis are absent. Eggs are usually attached to a float. Laursen[1] has revised the genus *Janthina*.

DESCRIPTION

Class	: Gastropoda
Subclass	: Prosobranchiata
Order	: Mesogastropoda (Caenogastropoda *partim*)
Superfamily	: Ptenoglossa
Family	: Janthinidae
Genus	: *Janthina* Roeding

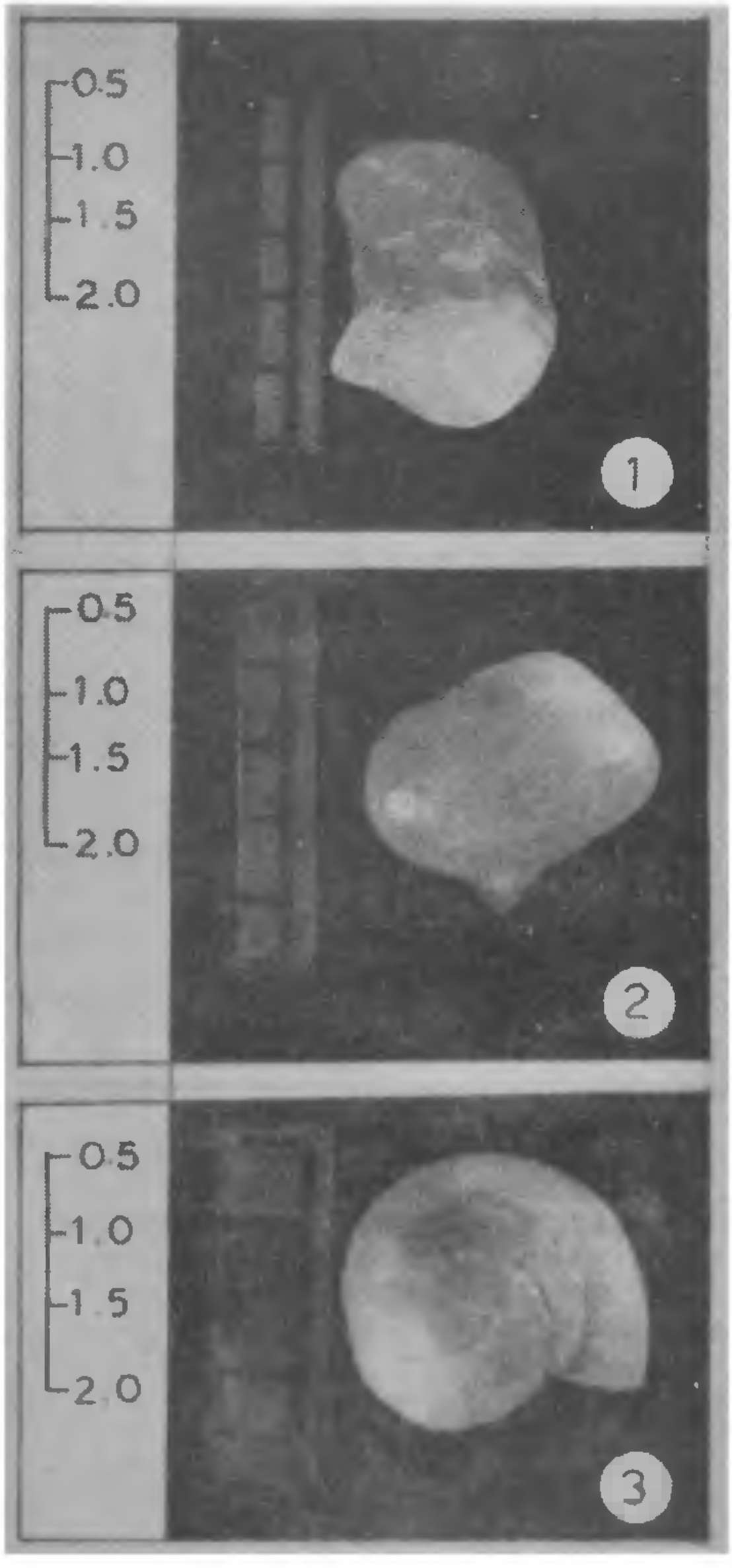
JANTHINA LAURSENI sp. nov.

The spire blunt, not sunken with 2½ coils, body whorl large, neither depressed nor inflated, slightly broken, with faint longitudinal striations, widely spaced in between and cross striations (except one) are not marked on the body whorl in the ventral view. Aperture is pear or onion shaped. The fossil is absolutely white, hard crystalline like marble.

One example collected in front of the Junior Basic School, bordering the cement foot path between Police Station and Kerala Samajam, facing Guitar Island, Long Island, Andaman group, December, 1976. Coll. *S. Krishnan*. Based on the observations of Srinivasan and Dave[2] with reference to planktonic foraminifera of Long Island, it is inferred that this specimen may belong to the Guitar information (early Pliocene) of the Neogene sediments, represented from the limestone which is the main sediment of the island, overlying the Long formation.

TABLE

		Measurements (mm)
Length from the apical angle to the anterior end		... 18.09
Width at the widest part of the body whorl		... 19.21
Aperture	Length	... 11.16
	Width	... 13.12



Figures 1–3. *Janthina laurseni* sp. nov. different views.

The species is named after Dr. Laursen, an authority on the genus *Janthina*. The fossil is well preserved. The nature of fossilisation indicates a long gap of time and hence placed as a new species in addition to two known extant species from the Bay of Bengal *viz.*, *J. roseola* Reeve and *J. globosa* Swainson. In *roseola* the body whorl is markedly angular and the lower part of the shell is somewhat flattened, while in *globosa* it is somewhat rounded or globular. The spire is low and the body whorl is depressed in *roseola*, while it is short and inflated in *globosa*. In the fossil species, the spire is not sunken and the body whorl is neither depressed nor inflated. In *roseola*, the striations are reticulate and more marked on the flattened lower surface of the shell, while *globosa* has fine striations. The striations are faint and widely spaced in between with the cross striations which (except one) are not marked on the body whorl in the ventral view in the new species. The aperture possibly of pear or onion shape unlike in *globosa* where it is oval, or in *roseola* where it is squarish.

Only two extant species *viz.*, *J. globosa* Swainson and *J. roseola* Reeve have so far been reported from the Bay of Bengal[3]. The list of fossil molluscan species[4] from Andaman and Nicobar Islands as well as the Cretaceous beds of S. India did not include any representative of this family.

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SIGNIFICANCE OF THE HISTOLOGICAL CHANGES IN THE FAT BODY OF *PERIPLANETA AMERICANA* (L) INFECTED WITH THE CYSTACANTHS OF *MONILIFORMIS MONILIFORMIS* (BREMSER)

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STUDIES on various enzyme systems and metabolites in the fat body of insects have not only revealed its nature as a mere storehouse of reserve materials, but also as an important organ of intermediary metabolism corresponding to the vertebrate liver[1-4]. The association of fat body of *Periplaneta americana* with the developing cystacanths of Acanthocephala[5,6] and also the frequency of this intermediate host with varying numbers of cystacanths of *M. moniliformis*[7] appear to be of interest in assessing the role of the fat body in the development of this parasite in its intermediate host. In the present study, aspects relating to the histological changes of the fat body of *P. americana* infected with the cystacanths of *M. moniliformis* were discussed.

Cockroaches (*P. americana*) were collected from eating houses (hotels) and domestic areas (houses) where increased incidence of infection of cystacanths of *M. moniliformis* in them was noticed. The specimens were dissected and those infected with more than 40 cystacanths were taken for the fat body analysis. The fat bodies were separated from the associated cystacanths and fixed in 10% formalin. Sections were cut at 7 micron thickness using Wesswox rotary microtome. They were stained in Ehrlich haematoxylin and counterstained with erythrocin.

The fat body of *P. americana* showing no cystacanth infection (control) revealed the globular configuration similar to that seen in other classes of insects such as Orthoptera, Lepidoptera, Hymenoptera, Coleoptera and Hemiptera[8] (figure 1). The nuclear diameter of cells in the control sections varied from 4.64 to 9.28 microns. The space surrounding the nucleus filled with granular materials, representing glycogen and fat reserves, measured 34.8 to 69.6 microns wide. The fat body tissue in the control sections also revealed the occurrence of limited vacuolar spaces surrounding the cells.

The fat body from the infected hosts, on the contrary revealed marked variations from that of the control (figure 2), with the globular pattern becoming completely unidentifiable through the marked absence of granules. The granular area as observed in the control sections appeared completely vacuolated in these infected fat body sections and the vacuolated spaces measured from 46.40 to 81.20 microns in diameter. The position of the nuclei in the cells was towards the periphery, and the nuclear diameter diminished to about 4.64 microns as compared to that in the control material. The walls of the adjacent cells appeared coalesced in such a way that the obliteration of granular spaces by vacuoles gave a syncytial appearance to the fat body. The absence of granules surrounding the nucleus of the cells also indicates the utilisation of the reserve glycogen,fat by the developing cystacanths.

Besides the above changes, the vacuolated mass of the fat body was also found to be infiltrated by haemo-