

An abnormal *Discocyclus* from the Tertiary rocks of Surat-Broach, Gujarat

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Abstract

The paper records the occurrence of an abnormal *Discocyclus* from Jhagadia, near Ankaleshwar in Gujarat State. Its unusual shape may be due to plastogamy in the early part of the life history.

Introduction

Two exposures of Tertiary sediments occur in the area between Surat and Broach, separated by the alluvium of river Kim. The basal beds, which are impure have been referred to Ranikot on the basis of the presence of *Nummulites thalicus*, *N. globulus* and *Discocyclus aff. ranikotensis*. Overlying these are beds with *Assilina exponens* and *Ostrea flemengi* regarded as Kirthar in age. Upper Eocene may be represented by beds containing *Discocyclus javana* and *D. cf. dispansa*. Younger beds are found near Jhagadia where they show considerable disturbance. Rao and Singh (1956) reported two species of *Lepidocyclus* from these beds.

Lithology and description

The lithology around Jhagadia comprises of yellowish calcareous sandstone with *Discocyclus* and *Nummulites*. Exposures are rather poor. Specimens described here were collected from a pit near the main road. These specimens have an unusual 'trigonal' shape and are noticed and recorded for the first time from this area.

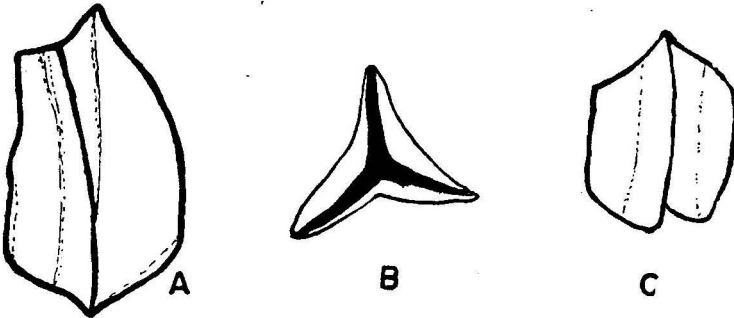


Figure 1. Front (A, C) and top (B) Views of 'Trigonal' *Discocyclus* sp. from Surat-Broach $\times 1.5$

The specimens have an elongate, distinctly trigonal shape and are tri-radiate in cross section (Fig. 1). The test consists of three elongate ridges radiating from a central elongate column; ridges gradually tapering towards the margin. The three inter-radial angles roughly equal. Surface smooth. Inter-radial portions depressed, sometimes filled with sediments. Cross sections show a distinct equatorial layer of chambers, generally thin and consisting of one row of chambers only and reaching up to the tip of the ridges; lateral layers of chambers many with lenticular chambers; chambers curved and compressed in the inter-radial portions, which are thicker near

the junction of the ridges and taper gradually. Pillars not distinct. The specimens on the whole look like twinned mineral specimens.

Remarks

Several larger foraminifera are reported to have developed 'trigonal' tests. Trigonal shaped *Lepidocyclina* was described from Saipam and Guam. Brady illustrated many specimens of *Marginopora* showing 'trigonal' shape. A *Discocyclina* of 'trigonal' shape has been described from the Pondicherry Formation of South India by Setty (1968). The reasons leading to the development of this unusual shape are not clearly understood. Setty (op. cit.) thinks that the adoption of 'trigonal' shape by *Discocyclina* sp. is purely due to environmental factors and according to him, *Discocyclina* seems to be very susceptible to changes in the environmental conditions. The author, however, is of the opinion that the 'trigonal' shape may be due to plastogamy in the early part of the life history.

References

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