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OCCURRENCE OF THE SPECIES *TICINELLA ROBERTI* (GONDOLFI) IN THE MID-CRETACEOUS SEDIMENTS OF CAUVERY BASIN, EAST COAST OF INDIA

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ABSTRACT

Twenty-nine planktic foraminiferal species belonging to 11 genera, 7 families, 4 superfamilies and 1 suborder have been identified from the mid-Cretaceous sediments of the Cauvery Basin. Among these, the species of *Ticinella* and *Whiteinella* are encountered for the first time in the study area. In this paper, the occurrence of *Ticinella roberti* (Gandolfi) is reported along with its taxonomy.

INTRODUCTION

The Cauvery Basin is one of the fast emerging oil fields in India. The mid-Cretaceous sediments of the Thiruchirappalli region are well known for their rich foraminiferal assemblages. There is a difference of opinion regarding the age of the oldest sediments in the Thiruchirappalli area. However, the authors were able to assign a latest Aptian age to these sediments on the basis of index foraminifera *Ticinella roberti* (Gandolfi) - Venkatachalapathy and Ragothaman (1995; 1996.).

Foraminifers were separated using standard micropaleontological techniques. The authors followed the classification proposed by Loeblich and Tappan (1988) and the "Atlas of mid-Cretaceous Planktic Foraminifera" by Robaszynski and Caron (1979); and with the latest modification on the same by Lee (1990) and Loeblich and Tappan (1992).

SYSTEMATIC PALAEONTOLOGY

Class **Foraminifera** Lee, 1990

Order **Globigerinida** Delage and Herouard, 1896

Superfamily **Rotaliporacea** Sigal, 1958

Family **Rotaliporidae** Sigal, 1958

Subfamily **Ticinellinae** Longoria, 1974

Genus ***Ticinella*** Reichel, 1950

Ticinella roberti (Gandolfi)
(Pl. I, figs. 1-2.)

Anomalina roberti Gandolfi, 1942, p.100-101, fig.32, pl.2, fig.2; pl.4, figs.4-7; pl.13, figs.3, 6.

Globotruncana (Ticinella) roberti (Gandolfi) - Reichel, 1950, pl.6, text-figs.1-2, pl.16, fig.1; pl.17, fig.1.

Rotalipora roberti (Gandolfi) - Bolli, Loeblich and Tappan, 1957, p.41, pl.10, fig.1.

Ticinella roberti (Gandolfi) - Sigal, 1952, pl.24, text-fig.9. - Sigal, 1966, p.203-207, pl.4, figs.10-12; pl.5, figs.1-4. - Banner and Blow, 1959, p.8, pl.3, fig.3. - Loeblich and Tappan, 1961, p.294-296, pl.6, fig.14. - Jansen *et al.*, 1984, p.391-392, pl.3, figs.1-2. - Leckie, 1984, p.600-601, pl.5, figs.1-2. - Caron, 1985, p.79, fig.36(13-15).

Description : The medium-sized, moderately biconvex, low trochoid test consists of 2½ whorls. About 7-7½ subspherical chambers of the final whorl increasing gradually in size as added. The distinct sutures are depressed and nearly radial on the spiral side, whereas they are straight and radial and depressed on the umbilical side. The wide umbilicus is moderately deep. The early chambers have small pores; the secondary calcification on the early chambers resulting in a somewhat rugose surface except the end chamber which is smooth. The periphery is broadly rounded. The primary aperture is low, interiomarginal, umbilical-extraumbilical arch bordered by a narrow imperforate lip which flares into the umbilicus forming a flap like extension that may fuse with earlier extensions. The secondary sutural apertures occur near the umbilical margin opening into the chambers, and are bordered by a narrow lip.

Remarks : This species was originally described by Gandolfi (1942) from the Lower Cenomanian "Scaglia Bianacea", Breggia river, Canton Ticino, Switzerland.

T. roberti differs from *T. primula* Luterbacher in a high trochospire and roughened surface on the chambers (Caron, 1985).

Sigal (1966) differentiated the form *T. roberti bejaovaensis* from *T. roberti* s.s. on the basis of more chambers in the last whorl (averaging 9) and a more open umbilicus. However, Leckie (1984) is of the opinion that it is difficult to recognize any distinct differences between *T. roberti* and *T.bejaovaensis*. Sigal (1966) reported a range for *T. roberti* from the Latest Aptian to Latest Albian and a concurrent range for *T. bejaovaensis* within the middle Albian.

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The chambers of *T. roberti* are more closely packed and more slowly increasing in size than those of *T. primula*.

In the present study area, *Ticinella roberti* occurs rarely and is confined to *Ticinella roberti* Total Range Zone.

Hypotype : Maximum diameter 0.17 mm., thickness 0.09 mm.

Type locality : Approximately 1Km. northeast of Neykkulam village from a pit near limestone quarry at a depth of 2 meters (fig.1).

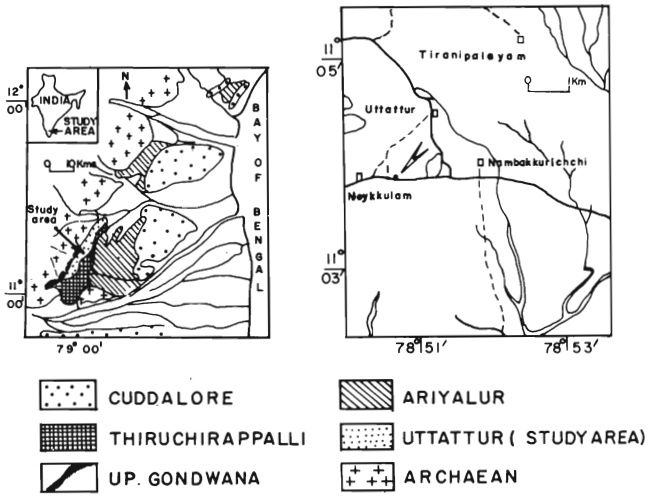

Fig.1 Showing location and geological map of the area.

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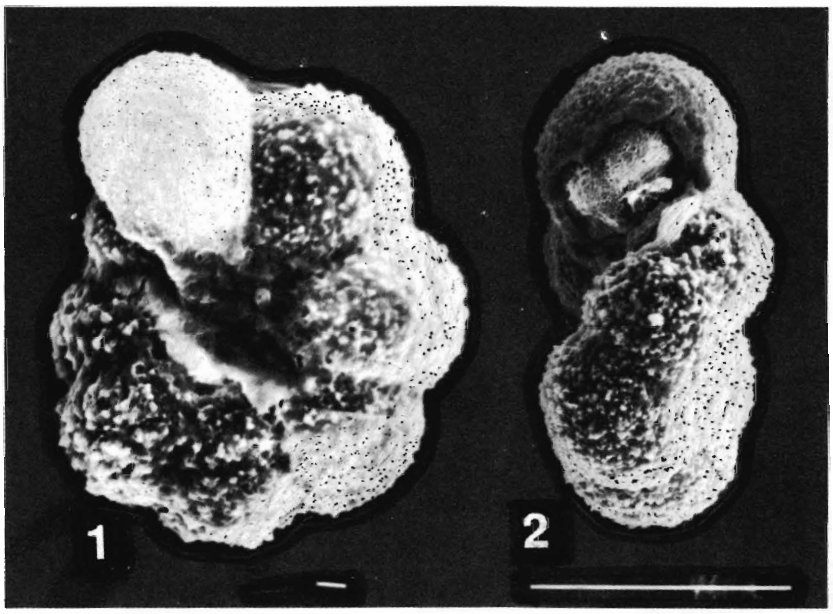
EXPLANATION OF PLATE

Plate I

Ticinella roberti (Gandolfi)

Umbilical side (bar = 10μm)

Peripheral view (bar = 100μm)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