

AN ABERRANT *BULIMINA* SPECIES FROM RECENT SEDIMENTS OFF KARWAR, WEST COAST OF INDIA

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ABSTRACT

A case of abnormal two apertured *Bulimina* species was encountered in a sea bottom sample from 24 metre water depth off Karwar. This abnormality seems to be a case of regeneration/repair.

INTRODUCTION

The studies^s carried out for distribution analysis of the foraminifera in the sea bottom sediments, collected with the help of Pettersson grab sampler on board D.S.P.V. Nand Rachit during November to December 1989, from the inner shelf regions (Lat. 14° 50.0' and Long 73° 57.0') off Karwar, west coast of India revealed a very interesting feature in *Bulimina* at water depth of 24 m. The sediment was olive green in colour and clayey in nature.

Aberrant features in foraminifera have been observed quite frequently earlier, the abnormal feature of *Bulimina* sp. is reported in this note.

DISCUSSION

A normal species has triserial test in early stage, and may tend to reduce to uniserial in later portion; wall calcareous finely to coarsely perforate, radial in structure, aperture extending up from base of apertural face, with free border that may have elevated rim and fixed border attached to the internal folded tooth plate.

The specimen (Fig. 1 a) from the study area possess two apertures instead of a usual one in the last chamber. An additional growth of chambers just below the normal aperture at an angle of 45° (approx.) gives rise to an aberrant look with two apertures. This specimen resembles *Bulimina exilis* (Brady) and differs in having double apertures (Fig. 1 b).

Abnormality in foraminifera is well documented, Brady (1884) reported the occurrence of an abnormal *Quinqueloculina* sp. from the recent sediments of North Pacific, Hooper (1966) recorded an abnormal *Milolinella* sp. from the New Foundland Grand Banks. Dhillon (1969; 1970) referred to an abnormal *Astacolus reniformis* (d'Orbigny) from the Holocene of Gantheaume Bay, Western Australia and to a double apertured *Ammotium salsum* (Cushman and Bronniman) [= *Ammobaculites salsus* (Cushman and Bronniman)] from the Muar river estuary, West Malaysia. Willems (1974) has also observed an aberrant *Uvigerina* specimen from lower Eocene of Belgium. Setty and Almeida (1972) reported abnor-

mal specimens of *Uvigerina*, *Sphinctoperta* and *Nodosaria* from the shelf sediments of central east coast of India and Setty *et al.* (1983) recorded a double apertured *Spiriloculina* sp. off Bombay-Daman west coast of India.

From the above facts it is clear that abnormality in foraminifera is a common tendency. But what really caused them is still not very clear. Several possible explanations for abnormal double apertures have been offered. They are caused by (i) injury, decrease or mutation as reported in the case of abnormal *Uvigerina* from the upper Eocene, Mississippi (Ellison, 1953); (ii) pollution effect as in the case of abnormal *Buccella* sp. and *Quinqueloculina* sp. from Nantucket Bay, Massachusetts (Lidze, 1965); (iii) some ecological factors as in the case of abnormal *Astacolus reniformis* (d'Orbigny) from the Gantheaume Bay; (iv) by injury and subsequent regeneration as observed in planktonic foraminifera under laboratory culture (Be' and Spero, 1981). The abnormality observed in *Bulimina* sp. in the present samples doesn't appear to

have been caused by pollution or ecological factors because the other associated fauna were found unaffected and normal.

Therefore it may be concluded that the two apertured *Bulimina* sp. might have resulted from regeneration/repair by which the damaged portion of the chambers required healing (or repair) and in the process, a secondary growth of chambers took place with a second aperture.

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REFERENCES

- BE', A. W. H. and SPERO, H. J.
1981 Shell regeneration and recovery of planktonic foraminifer after physical injury induced in laboratory culture. *Micropal.* vol. 27, pp. 305-316.
- BRADY, H. B.
1984 Report on the foraminifera dredged by H. M. S. challenger, during the years 1873-1876. Repts. Voy challenger, *Zool.* vol. 9, pp. 1-814.
- DHILLON, D. S.
1969 An abnormal *Astacolus* from the Holocene Gantheaume Bay, Western Australia. *Contrib. Cush. Found. Foram. Res.* vol. 20, pp. 99-100.
- 1970 An abnormal *Ammotium* from the Holocene, West Malaysia. *Micropal.* vol. 16, pp. 59-60.
- ELLISON, S. P. Jr.
1953 An abnormal *Uvigerina* from the upper Eocene, Mississippi. *Contrib. Cush. Found. Res.* vol. 4, pp. 55-67.
- HOOPEK, K.
1966 A note on an anomalous miliolid. *Micropal.* vol. 12, pp. 370-371.
- LIDZE, L.
1965 Sedimentary environment and foraminiferal parameters, Nantucket Bay, Massachusetts. *Limnol. and Oceanogr.* vol. 10, pp. 392-402.
- SETTY, M.G.A.P. and ALMEIDA, F.
1972 Some aberrant foraminifera from the shelf sediments of Central East Coast of India. *Proc. II Indian Colloquia on Micropaleontology and Stratigraphy*, pp. 103-106.
- SETTY, M.G.A.P., NIGAM, R. and FATERPENKAR, A. D.
1983 An aberrant *Spiriloculina* sp. from Recent sediments off Bombay-Daman, west coast of India. *Mahagar, Bull. Natn. Instt. Oceanography.* vol. 16, no. 1, pp. 77-79.
- WILLEMS, W.
1974 An aberrant *Uvigerina* from the lower Eocene of Belgium. *Micropal.* vol. 20, pp. 478-479.

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Figure 1 a) Double apertured aberrant specimen of *Bulimina*.
b) Normal specimen fo *Bulimina exilis*.