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A NEW SUB-SPECIE OF THE FORAMINIFERAL GENUS *INDICOLA* FROM THE UPPER EOCENE ROCKS OF SURAT, WESTERN INDIA

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ABSTRACT

The genus *Indicola* Singh and Kalia, is being reported for the first time from the Eocene rocks of Surat, W. India. The form occurs associated with *Pelllatispira madaraszi* Hantken var. *indica* Rao of Upper Eocene age. Though the form under description compares closely with *I. rajasthanensis* Singh and Kalia, but because of the difference in apertural character, and stratigraphical position, a new sub specie has been erected.

The presence of marine Eocene beds in Surat-Broach area has been known since long. Lithologically, the fossiliferous eocenes in this area are represented by hard limestones and overlying fine calcareous and clayey horizons. Rao (1941) on the presence of *Pellatispira madaraszi* Hantken var. *indica* Rao assigned an Upper Eocene age to these rocks, and Eames (1951) proposed the name Tapti Series for the entire succession.

Collections were made from all the lithologic horizons of Ghalha Nala Section, the best exposed section of the area, by the author. The succession observed in the Nala is given in Table 1.

Table 1. Sequence in Ghalha Nala

5. Compact clayey Limestone 4. Yellow clays 3. Chocolate brown clays	Upper Eocene
2. Compact Limestone	Middle Eocene
—————Unconformity—————	
1. Deccan Traps	

The genus *Indicola* Singh and Kalia, reported from the Lutetian of Rajasthan was found only in the chocolate brown clays and yellow clays of the Ghalha Nala Section and is associated with *Pellatispira madraszi* Hantken var. *indica* Rao. It has also been observed that in higher horizons the forms are smaller in size.

SYSTEMATIC DESCRIPTION

Superfamily Globigerinacea PARKER & JONES 1862
Family Indicolidae SINGH & KALIA 1970
Genus *Indicola* SINGH & KALIA 1970

Indicola rajasthanensis SINGH & KALIA sub sp. *taptiensis* sub. sp. nov.

(Pl. I—1-5)

Decription : Test trochoid, plano convex, ventral side strongly convex, dorsal side slightly concave, periphery lobulate, distinctly carinate ; volutions 2 to 3, last whorl made up of 6 to 7 chambers gradually increasing in size; sutures distinct, depressed, deeply incised on the ventral side ; wall coarsely perforate, favose, the perforations lying in pits larger in diameter than the pores ; umbilicus ellipso-conical, deep, with distinctly raised margin, divided into two parts by a prominent and raised cellular partition running the entire length of the umbilical cavity, parallel to the longer diameter of the ellipse with a number of transverse filaments on both sides of the partition ; aperture interiomarginal, multiple, 4 to 5 in number, definitely protruded in the form of a semicircular tube with a distinct lip.

Comparison and Remarks :

The specimen under description is very similar to *Indicola rajasthanensis* Singh and Kalia reported from the Lutetian of Rajasthan, India in all characters, but differs in having lesser number of chambers in the last whorl, lesser number of volutions and in the shape of the multiple apertures.

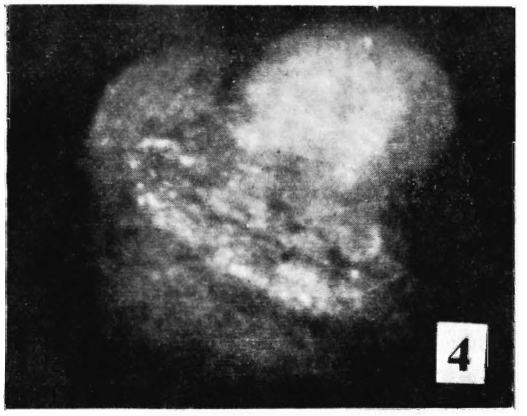
The above differences are sufficient to give it the status of a new subspecie.

Measurements in mm :

Holotype	*Length*	*Breadth*	*Thickness*
No. GLUS 1315 ..	0.4	0.363	0.25
Paratype			
1. GLUS 1316 ..	0.33	0.27	0.21
2. GLUS 1317 ..	0.37	0.33	0.26

Type Locality : Ghalha Nala Section, 3 km west of Bodhan, district Surat, W. India.


1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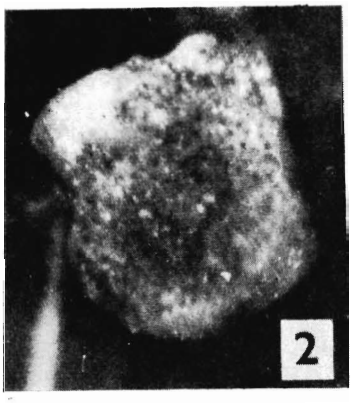
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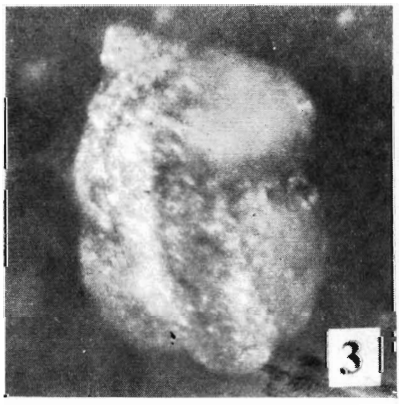
5


3

Type Horizon : Tapti Series, Upper Eocene.

Repository : Author's collection ; Holotype No. GLUS 1315, Paratypes No. GLUS 1316-1317.

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EXPLANATION OF PLATE

Plate I

Indicola rajasthanensis Singh & Kalia sub. sp. *taptiensis* sub sp. nov.

1 and 5. Apertural view. 1 × 80 approx., 5 × 148 approx.

2. Spiral view × 98 approx.

3. Ventral view × 110 approx.

4. Ventral view, Paratype, × 170 approx.