

TABLE I
Differential blood-cell counts in three species of major carps

Blood constituents	Species					
	<i>Labeo rohita</i>		<i>Cirrhina mrigala</i>		<i>Catla catla</i>	
	Range	Mean	Range	Mean	Range	Mean
Erythrocytes (%) :						
Mature	.. ..	97.0	.. ..	97.5	.. ..	96.5
Immature	.. ..	3.0	.. ..	2.5	.. ..	3.5
Thrombocytes (%)	.. 56.0-68.0	60.2	63.0-67.0	64.7	55.0-74.0	63.2
Non-Granulocytes (%) :						
Large lymphocytes	.. 0.0- 2.0	0.5	0.0- 2.0	0.5	0.0- 3.0	0.6
Small lymphocytes	.. 25.0-37.0	34.0	28.0-30.0	29.0	20.0-39.0	30.9
Granulocytes (%) :						
Neutrophils	.. 1.0- 5.0	3.5	2.0- 6.0	4.0	2.0- 8.0	3.8
Eosinophils	.. 0.0- 3.0	1.7	1.0- 3.0	1.6	0.0- 3.0	1.2
Basophils	.. 0.0- 1.0	0.08	.. ..	.. ..	.. ..	.. ..

somewhat higher values of small lymphocytes, while the results reported for air-breathing fishes⁴ were almost similar to those of the major carps.

Large lymphocytes were not found in all the specimens of the fish examined, although the average value for large lymphocytes in the three species did not differ markedly (Table I). These values were found to be substantially lower than those reported for the air-breathing fishes.⁴

Granulocytes contained the eosinophils and neutrophils which were quite common in all the three species, but the basophil was found only in *Rohu*. The percentages for eosinophils were 1.7%, 1.6%, 1.2% and for neutrophils 3.5%, 4.0%, 3.8% in *Rohu*, *Mrigal* and *Catla* respectively. For eosinophils and neutrophils the percentages agree closely with those of the marine fishes,⁸ and are significantly lower than those of the air-breathing species.⁴

The erythroblasts (immature erythrocytes) were 3.0% in *Rohu*, 2.5% in *Mrigal* and 3.5% in *Catla*. All these three species thus fall into group II and III made by Dawson.¹

From the picture presented above, it is clear that, neglecting small differences, the composition of the blood-cells in the three species of carps is more or less identical (Table I), which indicates a similar physiological or ecological state of the fishes. Small fluctuations in the environmental factors such as temperature, pH, dissolved oxygen of water and the quality and quantity of food present in the environment, are supposed to have an immediate effect on the physiology of fishes which is in turn reflected from the blood-cells.^{2,3,7,9} Since these factors seem to be common for the three species, and the three species are closely related

systematically, no differences in differential blood-cell counts were noticed. Slight variations in the percentages of different blood-cells are probably specific to each species.

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Department of Zoology, A. QAYYUM SIDDIQUI,
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ON A LITTLE KNOWN MILIOLID FORAMINIFER FROM NORTH-EASTERN PART OF THE ARABIAN SEA

WHILE making a distribution analysis of the Foraminifera from snapper samples collected from the north-eastern part of the Arabian Sea during the cruises 2 and 4 on board I.N.S. 'Darshak' in January to February 1967 and 1969 the author came across a few very interesting specimens of a miliolid species, *Triloculina echinata* d'Orbigny. Certain

TABLE I

Station No.	Geographic position		Depth (m)	Temperature °C. (surface)	Nature of sediment	Occurrence
	Latitude	Longitude				
21	19° 7' N	72° 2' E	64	24.72	Sandy	Rare
23	20° 16' .7 N	70° 34' .5 E	77	23.88	Muddy sand	„
40	18° 34' .5 N	72° 22' .0 E	62	26.38	Sandy	„

observations made on this species are given below.

ORDER: FORAMINIFERA

FAMILY: MILIOLIDAE

GENUS: *Triloculina* d'Orbigny, 1826.

Triloculina echinata d'Orbigny (Fig. 1, a-c.)

Shape.—Test as long as broad, subspherical in outline.

Chambers.—Three on one side and two on the other, each being half a coil in length and closely placed together. Periphery of the test rounded; final chamber longer than other two with little or no apertural neck; surface ornamented with spines arranged in longitudinal rows; aperture round with a simple bifid tooth.

Dimensions of the test: 0.525 mm. in length, 0.450 mm. in breadth and 0.09 mm. in diameter of aperture.

Colour.—White with a brownish tinge.

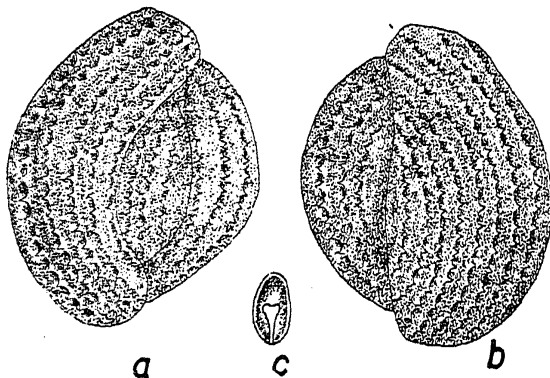


FIG. 1. *Triloculina echinata* d'Orbigny a, Dorsal view; b, Ventral view; c, Apertural view.

Distribution.—In the area under study this species was rare at all stations as given in Table I.

Remarks and Previous Records.—The miliolid species described here resembles that of d'Orbigny (1826)¹ from St. Helena in South Atlantic, which he named *Triloculina echinata*. d'Orbigny had given only a figure of his species with no description. Further no prototype material from St. Helena is available at present. Subsequently, Fornasini (1905)² described d'Orbigny's illustration of the said species. This description of the species agrees with that given by the author in the presence of

three chambers on one side and two on the other, of spines arranged in longitudinal lines and with little or no apertural neck. Five specimens of the slide (USNM Cat. No. 643464) labelled "*Triloculina echinata* d'Orbigny, 1826. Beach sand, Karachi, India, Earland collection" present at the Geological Survey, United States National Museum, Washington, D.C., are also identical with the species described by the author except that the apertural end is slightly protruding. So far as is known these are the only previous records of this species. It is possible that one can encounter specimens of this species at water depths ranging between 60–80 meters in the Arabian Sea.

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Biological Oceanography K. KAMESWARA RAO,
Division,
National Institute of
Oceanography,
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DISCOVERY OF MICROFOSSILS FROM PARASIA COALFIELD, CHHINDWARA DISTRICT, M.P., INDIA

THE microfossils reported here were recovered from a coal sample collected from East Donger Chikli Coal-mine in Parasia. This coal seam is believed to be of lower Gondwana age. On maceration, the coal yielded a large number of well-preserved cuticles, megaspores, microspores and tracheids. Only two well-preserved cuticles and a megaspore are described here.

Glossopteris divergens Feistmantel^{3,4} (Figs. 1 and 2).—Epidermal cells rectangular or polygonal, 70 to 80 μ long and 30 to 40 μ broad.