

RESEARCH NOTES

A NEW SPECIES OF *BRACHYCYTHERE* (OSTRACODA) FROM UPPER CRETACEOUS OF TRICHINOPOLY, SOUTH INDIA¹ by D. K. Guha, (*Oil & Natural Gas Commission, Baroda*)

The author while examining some samples from a bore hole drilled in Trichinopoly district by Geological Survey of India near Kulattur ($11^{\circ}17'$; $79^{\circ}20'$), Ariyalur Taluka, recorded four species of Ostracodes namely *Cytherella austinensis* Alexander, *Brachycythere kulatturensis* n.sp., *Cythereis ornatissima* Reuss aff. *adictyota* Pokorny and *Cythereis* cf. *austinensis* Alexander. The samples were collected by S. Venkataraman, Geologist, Oil & Natural Gas Commission. The well was drilled on Trichinopoly stage sediments and the ostracodes were recorded at depths between 34–157 m. The lithology mostly consists of dark grey to grey carbonaceous sandstone and silstones. Ostracodes are very rare in the samples; the preservation of the forms however is very good. The new species is described in this paper.

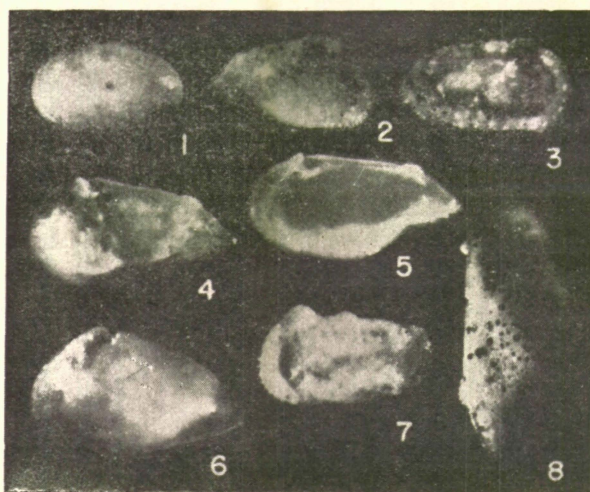


Figure 1.

1. *Cytherella austinensis* Alexander, left valve $\times 27$.
- 2, 4. *Brachycythere kulatturensis* n. sp. right valve $\times 24$.
- 5, 6 & 8. inner view of two right valves showing hinge pattern $\times 32$; left valve $\times 24$; dorsal view of a right valve $\times 38$.
3. *Cythereis ornatissima* Reuss aff. *adictyota* Pokorny left valve $\times 24$.
7. *Cythereis* cf. *austinensis* Alexander, left valve $\times 25$.

All specimens including the holotype are kept in Paleontology Laboratories, Baroda.

Systematic Description: Ostracoda Latreille, 1802

Order: PODOCOPA Sars, 1866

Family: CYTHERIDAE Baird, 1805

Genus: *Brachycythere* Alexander, 1933

*Brachycythere kulatturensis*² n. sp.

(Fig. 1, Nos. 2, 4, 5, 6 & 8)

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² Named after the locality where first found.

Description: Shell subtriangular with maximum height in the anterior, just posterior to eye spot. Left valve is larger than the right, overlapping it along margins and anterior end. Anterior end high, regularly rounded carrying 7-8 thin, marginal spines in its lower half. Posterior end pointed, strongly drawn out into a sharp point in its middle and the lower part carrying 4-5 marginal spines. Dorsal margin straight sloping posteriorly. Ventral margin slightly concaved anterior to the middle. The shell is thickest in the central part. The crest of the thickest part is compressed to form a ventro-lateral rib. The surface ornamentation consists of shallow rounded pits specially in the central part of the valve. Eye-spot is very distinct, behind which there is a roundish pit with variable depth.

Size in mm: Holotype No. K/3. Length 0.82, height 0.51 and thickness of valve 0.25. Paratype No. II length 0.87, height 0.48 and thickness of valve 0.25.

Comparison: The species is very close to *Brachycythere ogunii* Reyment (1960, p. 134, Pt. V, Fig. 2) recorded from Upper Maestrichtian of Nigeria from which it differs in having more pointed and drawn out posterior end. From *Brachythere ekpo* Reyment (1960, p. 123, Pl. VI, Figs. 1-5) recorded from Lower Santonian of Nigeria and Campanian of Cairo, the new species differs in having stronger pitted sculpture and marginal spines.

Occurrence: Good number of shell and valves were recorded in samples of depth between 34-157 m.

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CYCLIC SEDIMENTATION IN THE MIDDLE SIWALIKS by I. P. Bajpai, (*Department of Geology and Geophysics, University of Roorkee, Roorkee*)

The Upper and Middle Siwaliks exposed along the Siwalik ranges running NW-SE between the Ganga and Jamuna rivers have been investigated for sedimentological studies. The Siwalik range is occupied by an anticline (Mohand anticline) whose axis lies just south of Mohand ($30^{\circ}10'49''$, $77^{\circ}54'14.5''$) and forms the southern boundary of the Doon Valley.

The Middle Siwaliks consist of fine to medium sandstones and siltstones interbedded with thick clay beds. The sandstones have a typical 'salt-and-pepper' texture and are soft and friable due to lack of cementation. At a few places, lenses and sandballs of compact hard sandstones cemented with calcareous matter protrude above the soft sandstones lacking cementation. The Middle Siwaliks in the present area grade conformably into the Upper Siwaliks. The Upper Siwaliks consist dominantly of conglomerates with minor sandstones occurring as lenses.

The sandstones in the Siwaliks of the area show predominantly cross bedded structure and rarely plane laminations. The siltstones are invariably cross laminated.

Most sets of cross bedding are grouped into cosets, although solitary sets are not uncommon. Two varieties are found; (i) planar cross beds, and (ii) trough cross beds, corresponding to 'omikron' and 'pi' classes of Allen (1963). Of these, planar cross beds are more common than the trough cross beds. At places the shale conglomerates may be strewn along foresets, more commonly at the base of the sets. The traces of cross bedding and cross laminations on bedding plane are also observed. Structures such as flaser bedding and parting lineation are seen at some of the places.

The Middle Siwaliks exhibit a typical cyclic development of sedimentary bedding forms and structures. A generalized cycle consists of the following units from bottom to top; (i) intraformational conglomerate, (ii) trough and/or planar cross bedded medium and fine grained sandstone, (iii) plane laminated fine sandstone, that is more often absent than present, (iv) cross laminated fine sandstone or siltstone; (v) alternations of cross laminated siltstone and clay, and (vi) thick bed of purple red clay with occasional carbonaceous bands. Thus, in general, a fining upward sequence is observed. Most cycles, however, are incomplete or truncated.

The generalised vertical sequence of bedding forms observed in the Middle Siwaliks corresponds broadly to the 'ideal' vertical sequence for the fluvial flood plain deposits given by Visser (1965). The sequence can best be explained by assuming that the intraformational conglomerates and cross bedded and plane laminated sandstones were probably deposited in channels or on point-bars. Cross laminated fine sandstones and siltstones and alternating siltstones and clays were deposited on channel levees. Purple red clays were deposited by overbank floods of the rivers in the flood plains away from the main channels essentially by the process of vertical accretion. The presence of intraformational conglomerates suggests migration of river channels and reworking of finer flood plain deposits.

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