

A NEW EARLY EOCENE CYTHERURID OSTRACOD SPECIES FROM INDIA

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A new ostracod species—*Semicytherura pangadiensis*—belonging to family Cytheruridae is described and illustrated from the Inter-trappean beds of Early Eocene age, Pangadi area, Andhra Pradesh. Scanning electron photomicrographs reveal the presence of normal, single pores without lip scattered randomly on the lateral surface of the carapace. The associated foraminiferal assemblage indicates that *S. pangadiensis* lived in a near-shore, epineritic environment having open sea influence.

Keywords : New Species; *Semicytherura pangadiensis*

INTRODUCTION

THE Kakinada-Rajahmundry-Masulipatam region of Andhra Pradesh, east coast of India, received marine sediments off and on since Paleocene due to proximity to the coastline coupled with the structural setting of the region (Bhalla, 1970). The Inter-trappean beds of the Pangadi area (17° 1' N : 18° 39' 02" E), lying in this region are the result of the first marine invasion which took place immediately after the initiation of the Deccan Trap activity. This igneous episode continued after a brief pause sandwiching the Inter-trappean beds in the early flows of lava. Due to their rich, predominantly marine, fossil assemblage which provides clue to the much debated problem of the age of the Deccan Trap, the Inter-trappean beds of the Pangadi area have always been of considerable interest to palaeontologists in this country ever since they were first described by Benza (1837).

Although it is generally agreed that the Pangadi Inter-trappeans belong to the Early Eocene, their precise placement within the Early Eocene is still not certain. This is due to the fact that no index-fossil which could bear testimony to their accurate age, has yet been found in them.

A lot of work has been done on the megafossils of the Inter-trappean beds of the Pangadi area but adequate attention has not been paid to their microfossil assemblage. Bhalla (1967) gave the first detailed account of foraminifera from these beds but ostracodes which have gained importance in age determination and interpretation of depositional environment of rocks, received only passing references from micropalaeontologists (Sastri, 1961; and Bhalla, 1965, 1967; Guha & Raja, 1965 and Jain, 1978). In view of their significance, it was felt necessary to examine the ostracod assemblage of the Pangadi Inter-trappeans and during the study, a new species

belonging to genus *Semicytherura* Wagner was discovered which is being named as *Semicytherura pangadiensis* and is described here.

The succession of the Inter-trappean beds, their sample numbers, localities, ecological units, etc., mentioned in the present text are the same as those given for foraminiferal assemblage by the author (Bhalla, 1967). *Semicytherura pangadiensis* n. sp. was left under open nomenclature in an earlier publication.

Semicytherura pangadiensis n. sp. is found in *Ecological Units* II and IV in association with foraminifera, e.g., *Fissurina laevigata* Reuss, *Nonion kingi* Bhalla, *Protelphidium adamsi* Bhalla, *P. duddukurensis* Bhalla, *Rosalina sub-vilardeboana* (Rzehak), etc. On microfaunal evidence, Bhalla (1967) observed that these Units were deposited in a near-shore, epineritic environment having open-sea connections and, therefore, it is concluded that *Semicytherura pangadiensis* n. sp. also inhabited such an environment.

SYSTEMATIC DESCRIPTION

Subclass OSTRACODA Latreille, 1806

Order PODOCOPIDA Mueller, 1894

Suborder PODOCOPINA Sars, 1866

Superfamily CYTHERACEA Baird, 1850

Family CYTHERURIDAE Mueller, 1894

Genus SEMICYTHERURA Wagner, 1957

Semicytherura pangadiensis n. sp.

Diagnosis

Carapace fairly thick, elongate-subovate in lateral view, medium in size, maximum height in middle; anterior margin broadly rounded, compressed, smooth; dorsal margin greatly arched; posterior end with a well-developed, smoothly rounded, centrally placed caudal process, merging gradually with dorsal and ventral margins; ventral outline straight, ventral side of each valve with a tendency to form wing-like lateral prolongation.

Eye tubercle obscure; lateral surface of carapace ornamented with fairly well-marked meshwork of reticulations having shallow, somewhat angular, pits.

In dorsal view, carapace lanceolate, maximum width slightly behind middle; lateral sides somewhat compressed, converging rapidly towards posterior but gradually towards anterior end; posterior extremity tightly compressed; RV slightly overlapping LV.

Scanning electron photomicrographs show the presence of numerous rather irregular to nearly rounded, pores scattered randomly on the lateral surface of carapace; pores are normal, single, without lip and belong to Type A' of Puri (1974).

Valve interior not observed.

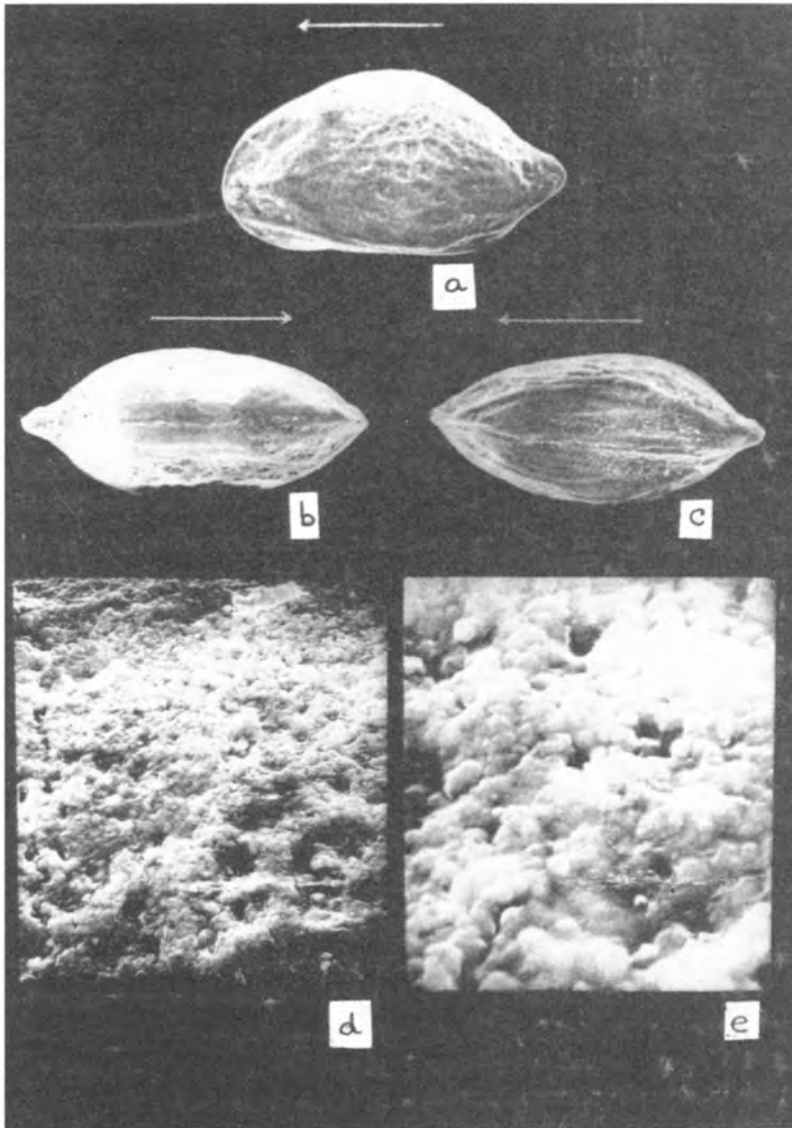


FIG. 1a-e. *Semicytherura pangadiensis* n. sp., Holotype, G. S. I. No. 19541; a, side view $\times 167$; b-c, dorsal and ventral views $\times 167$; d, exhibiting random distribution of pores of different sizes with irregular to nearly rounded outline on lateral surface $\times 1143$; e, enlargement of the central portion of d showing normal, single, nature of pores without having lip $\times 4740$.

Dimensions (in mm)

	length	height	width
Holotype (Fig. 1a-e)	0.37	0.19	0.16
Other specimens	0.34 to 0.38	0.17 to 0.19	0.16 to 0.17

DISCUSSION

Semicytherura pangadiensis n. sp. is close to *S. rameshi* (Singh and Misra) (= *Cytherura rameshi* Singh and Misra, 1969), originally described from the Eocene beds of Rajasthan, India, but differs in having smaller, less inflated, and elongate carapace with more arched dorsal margin and less developed and not overhanging wing-like lateral prolongations on ventral side. From *Semicytherura forestensis* (Keij) (= *Cytherura forestensis* Keij, 1957) described from the Lutetian of Belgium, *S. pangadiensis* can be distinguished by the absence of convex, overhanging, ventral outline, ornamental pattern, and smaller size of carapace. In contrast to *S. forestensis*, the caudal process of *S. pangadiensis* occupies a more central position.

Type Horizon

Inter-trappean beds, sample L/5-6, hard limestone. Also in sample L/11 at locality L.

Type Locality

Quarry section, about 1.61km southeast of Duddukuru village and less than 200m from milestone 350 on Kavvur-Eluru road, West Godavari District, Andhra Pradesh, India.

Geologic Age

Early Eocene.

Repository of Type Material

Holotype, No. 19541, a complete carapace, deposited in the Paleontological Collections of the Geological Survey of India, Calcutta.

Etymology

Named after the type-locality Pangadi, West Godavari district, Andhra Pradesh, India.

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