A New Species of Indoculana Kanjilal & Singh (Bivalvia) from the Lower Callovian (Jurassic) of Gora Doonger, in Pachchham Island, District Kachehh (Gujarat, India)
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Reviewed work(s):
Published by: SEPM Society for Sedimentary Geology
Stable URL: http://www.jstor.org/stable/1304557
Accessed: 14/11/2011 06:08

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PALEONTOLOGICAL NOTES

A NEW SPECIES OF INDOCULANA KANJILAL & SINGH (BIVALVIA) FROM THE LOWER CALLOVIAN (JURASSIC) OF GORA DOONGER, IN PACHCHHAM ISLAND, DISTRICT KACHCHH (GUJARAT, INDIA)

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ABSTRACT—A new species of the bivalve genus Indoculana (J. sadharaensis n. sp.) from the Lower Callovian of Gora Doonger in Pachchham Island, Kachchh District is described and illustrated.

INTRODUCTION

Until now the bivalve family Nuculanidae Adams & Adams has been recognized in the Jurassic of Kachchh only on the basis of four species belonging to the genera Nuculana Link, Reticulina Cossman and Indoculana Kanjilal & Singh. Until recently, Indoculana Kanjilal & Singh was represented only by the type species, and the present find is an additional record of its occurrence in the Jurassic of Kachchh. The material described here has been collected from a ferruginous argillaceous flagstone bed (Nucula Flags) which is full of nuculids and which has, in addition, yielded several species of the ammonite Macrocephalites Zittel.

The material described here is repositored in the Department of Geology, Banaras Hindu University, Varanasi 221005, India.

SYSTEMATIC DESCRIPTION

Class Bivalvia Linne, 1758
Order Nuculoida Dall, 1889
Superfamily Nuculanacea Adams & Adams, 1858
Family Nuculanidae Adams & Adams, 1858
Genus Indoculana Kanjilal & Singh, 1980

Type species.—Reticulana calloviensis Kanjilal & Singh, 1973, p. 469, Pl. 1, figs. a–b.

Remarks.—The genus name Reticulana was proposed by Kanjilal & Singh in 1973 with R. calloviensis as its type species. Subsequently the name was found to be preoccupied by Reticulana Bethune-Baker, 1906—a lepidopteran. Hence Kanjilal & Singh proposed a new name Indoculana (1980, p. 490).

Indoculana sadharaensis n. sp. (Text-figs. 1a–d)

Etymology.—The specific name is derived from the type locality, the village of Sadhara.

Material.—Holotype (BHU PG/235/1) and several paratypes; all are disarticulated left and right valves.

Horizon and locality.—‘Nucula Flags’ (lower Callovian), ENE of Sadhara, Pachchham Island, Kachchh.

Description.—The shell is small, well inflated, and posteriorly rostrate; the blunt end of the rostrum is just below the middle to ventrally ⅓ of the shell-height. The umbones are tumid, incurred, opisthogyrous, well above the cardinal margin and mesial to slightly anterior to the midline; umbonal profile is broadly angular. Anterodorsal margin and corresponding profile are moderately inclined and gently convex, merging smoothly with the small and rather acutely arched anterior margin. Posterodorsal margin long and concave, the proximal ⅓ sloping steeply, while the distal ⅔ slopes comparatively gently. The ventral margin is more or less gently and symmetrically convex, meeting the anterior margin in a smooth curve, but forming a bluntly rounded rostrum at the posterodorsal margin. The lunule is small but wide, shallow and poorly defined while the escutcheon is prominent, elongated, well impressed and bounded by a broadly rounded, non-bifurcating umbonal ridge in each valve. A shallow and faint sulcus extends from near the umbo to the anteroven- tral end without producing any sinuosity in the margin.

1 Variously spelled: Putcham, Patcham; Cutch, Kachh, Kutch.
The shell surface is ornamented with co-marginal and radial threads. The former are very fine, sharply rounded, evenly spaced and cover the whole of the shell surface; they number about 65 on a shell 6.3 mm high. The radials are present in the anterior and posterior regions only. The anterior 1/10 portion of the shell surface bears about 40 radial threads which rapidly deflect towards the anterior at their ventral ends; the posterior 1/2 to 2/5 of the surface has about 30, rather widely spaced, fine threads, many of them originating from the posterior umbonal ridge itself. The escutcheon has about 35 prominent, slightly curved transverse threads which terminate against the umbonal ridge with a little upward bend.

The hinge consists of a long and concave posterior row of teeth, and a comparatively short and convex anterior row. The teeth of the posterior row, numbering 10, are small, vertical and parallel; whereas those in the anterior row, numbering 16, are also vertical and parallel but gradually increase in size anteriorly.

Dimensions.—The measurements are given in Table 1.

<table>
<thead>
<tr>
<th>Specimen no.</th>
<th>Length</th>
<th>Height</th>
<th>Inflation (single valve)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BHU PG/235/1 (holotype)</td>
<td>10.0</td>
<td>6.3 (63.0)</td>
<td>2.5 (25.0)</td>
</tr>
<tr>
<td>BHU PG/235/6 (paratype)</td>
<td>8.3</td>
<td>5.6 (67.3)</td>
<td>—</td>
</tr>
<tr>
<td>BHU PG/235/3 (paratype)</td>
<td>7.6</td>
<td>4.9 (64.4)</td>
<td>2.1 (27.6)</td>
</tr>
<tr>
<td>BHU PG/235/4 (paratype)</td>
<td>6.9</td>
<td>4.9 (71.0)</td>
<td>—</td>
</tr>
<tr>
<td>BHU PG/235/2 (paratype)</td>
<td>6.8</td>
<td>4.5 (66.0)</td>
<td>1.9 (27.9)</td>
</tr>
<tr>
<td>BHU PG/235/5 (paratype)</td>
<td>6.2</td>
<td>4.5 (72.5)</td>
<td>2.0 (32.2)</td>
</tr>
</tbody>
</table>

Remarks.—The present species differs from *Indoculana calloviensis* (Kanjilal & Singh, 1973, p. 469, pl. 1) by the absence of radial threads over the middle portion of the shell surface, and the presence of a faint sulcus between the umbo and the anteroventral margin. Also the escutcheon of *I. calloviensis* is smooth except for very feeble concentric undulations; whereas prominent transverse threads occur in the new species.

About a dozen specimens in the BHU collection labeled "Dacryomya" agrawali, from beds 20 and 26 (lower Callovian) of the Bela Formation, have some similarities to this new species. They differ, however, in the presence of radial threads on their posterior part only and hence are quite distinct.

ACKNOWLEDGMENTS

The authors are grateful to S. K. Agrawal, leader of the BHU team investigating the Jurassic of Kachchh, for going through the manuscript and giving many valuable suggestions, and to S. Kanjilal, a co-worker in Kachchh, for useful discussions. Sincere thanks are also due to Keith Duff for critically reviewing the manuscript and giving many valuable suggestions.

REFERENCES


MANUSCRIPT RECEIVED JANUARY 21, 1980
REVISION MANUSCRIPT RECEIVED DECEMBER 12, 1980